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Walton

A PICTORIAL PRIMARY ARITHMETIC,

ON THE PLAN OF

OBJECT-LESSONS.

PUBLIC LIBRARY

BY

G. A. WALTON,

AUTHOR OF "WRITTEN ARITHMETIC," "DICTATION EXERCISES IN ARITHMETIC," ETC.

BOSTON:
BREWER AND TILESTON.
1867.

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PLAN OF THE BOOK.

Lessons I to IX contain Addition and Subtraction of numbers from [illegible] ten.

Lessons X to XII are Reviews in Addition and Subtraction.

Lesson XIII illustrates the writing of numbers to twenty.

Lessons XIV to XXIII contain Addition and Subtraction of numbers from ten to twenty, with Addition and Subtraction Tables and short columns for Addition.

Lessons XXIV to XXVI are Reviews in Addition and Subtraction.

Lesson XXVII illustrates the writing of numbers to one hundred.

Lessons XXVIII to XXXVIII contain Multiplication and Division combined; also, Multiplication and Division Tables.

Lessons XXXIX to XLII contain Multiplication, with solutions.

Lessons XLIII to XLVI contain the *subtractive* form of Division, with solutions.

Lessons XLVII to XLIX contain the subtractive form of Division, with remainders.

Lesson L contains Reviews.

Lessons LI and LII contain the *fractional* form of Division.

Lessons LIII and LIV contain applications of Multiplication and Division.

Lesson LV contains Reviews.

Lessons LVI to LXIV treat of Fractions.

Lesson LXV contains Reviews.

Lessons LXVI to LXXI contain Compound Numbers, with tables and applications.

Page 95 contains a Review Circle.

Page 96 contains the Multiplication Table.

Entered, according to Act of Congress, in 1866, by G. A. Walton, in the Clerk's Office of the District Court of the District of Massachusetts.

ELECTROTYPED AT THE BOSTON STEREOTYPE FOUNDRY.

PREFACE.

NUMBER, as applied to objects, is one of the first properties perceived by the child; he intuitively distinguishes between one and more than one, and easily learns to add and subtract small numbers before he learns to read.

The elementary combinations of numbers, with appropriate illustrations, are treated in this book upon the plan of object-lessons. Addition and Subtraction, which are the converse of each other, are given in immediate connection; so also are Multiplication and Division. Each combination is thus presented in a variety of forms, and may be fully committed to memory without wearying the learner.

Nearly every lesson is accompanied by an exercise for the slate. The figures in script are from the excellent copy-books of the Messrs. Payson, Dunton, and Scribner. In the Exercises in Addition, in columns, all the elementary combinations are arranged progressively, and repeated many times; if the pupil becomes accurate and quick in adding these, he will readily acquire facility in the practice of the other mechanical operations of arithmetic.

It is due to Mrs. Walton to state that, although in this, as in the Written Arithmetic, but one name appears upon the title page, she has equal claims with myself to the authorship of the book.

Many teachers, of great ability and experience in the department of primary instruction, have kindly lent their aid to render this little work at once attractive, thorough, and practical.

G. A. WALTON.

LAWRENCE, May 5, 1866.

SUGGESTIONS TO TEACHERS.

The plan of instruction presented in this book differs somewhat from that of most Primary Arithmetics; it is believed to be better adapted to the wants of childhood. The success of any plan, however, depends upon the living teacher.

Although these lessons are very much in detail, the teacher will find it necessary to ask many questions that are not in the book; his aim should be to secure to the pupil a perfect mastery of all the principles of each lesson as he proceeds.

Pictures are a great aid to the imagination, but nothing can supersede the use of *objects* for illustrating numbers. These should be employed by the teacher at every step in the child's progress; they are indispensable in his early lessons. Every Primary School should be provided with, at least, a quantity of beans or corn to be used for counters, and for measuring; also, with the weights and measures in common use, and with these the pupils should be made familiar.

The pictures in this book are generally treated as if they were the objects themselves, and it may be well to call the attention of the pupil to the distinction between pictures and the objects which they are designed to represent.

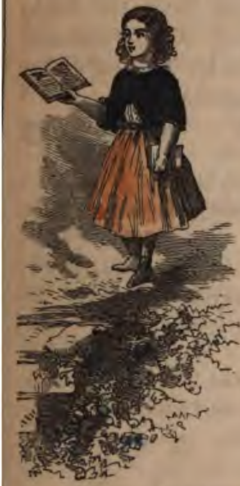
Besides performing the slate exercises given in the book, the pupils should be encouraged to form for themselves, and write upon the slate, tables in Addition, Subtraction, Multiplication, and Division, while attending to these subjects.

Solutions of examples are not given till the latter part of the book. Their use must depend upon the development of the reasoning faculties. With some pupils it may be well, haps, to introduce solutions earlier.

PRIMARY ARITHMETIC.

Lesson I.

WHAT has this little girl in her right hand?



What has she in her left hand?

One book and one book are two books.

How many books has the little girl in both hands?

How many hands has she?

Point to them.

How many eyes have you?

How many chins?

How many feet?

How many thumbs have you on your right hand?

How many have you on your left hand?

How many on both?

How many are one and one?

Show me one book; one chair; one door; two fingers; two hands.

Here is the figure which stands for one: 1.

Here is the figure which stands for two: 2.

Make these figures on your slate.

Lesson II.

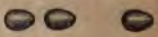
YESTERDAY little Charlie found a hen's nest, with two eggs in it.

Three Eggs.

To-day Charlie found one egg more in the nest; how many eggs were there in the nest to-day?

Charlie took one egg from the nest; how many eggs did he leave in the nest?

How many eggs are two eggs and one egg? How many are one egg and two eggs?



One egg from three eggs leaves how many? two eggs from three eggs?

Here are Charlie's three chickens; one is running away, and the others are drinking; how many are drinking?

One chicken and how many more chickens are three chickens?

Two chickens and how many more are three?

How many more are three chickens than two chickens?

What number is one more than two?

Show me three fingers; three straight lines on your slate.

e is the figure which stands for three: 3.

e the figures 1, 2, 3, upon your slate.

Lesson III.

Do you see this black rabbit in the front of the picture? How many other rabbits do you see?

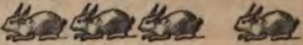
Four Rabbits.

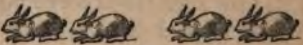
How many rabbits are three rabbits and one rabbit?

How many ears has one rabbit?

How many ears have two rabbits?

How many are three rabbits and one rabbit?

How many are one rabbit and three rabbits? 

How many are two rabbits and two rabbits? 

How many feet has one dog? This dog is holding one foot up; how many feet are on the ground?

One from four leaves how many? two from four?

How many feet has a horse?

A blacksmith has two horse-shoes; how many more must he get before he can shoe a horse?

Two shoes and how many more are four shoes?

Three and how many more are four?

One and how many more are four?

Hold up one finger; two fingers; three; four.

Here is the figure which stands for four: 4.

Make the figures 1, 2, 3, 4, upon your slate.

Lesson IV.

Miss Puss is a famous mouser; she caught four mice last night, and she has caught one to-day; how many mice has she caught in all?

Five Mice.

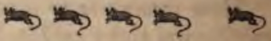
How many feet has puss?

How many more feet has puss than you have?

Name the numbers in order, from one to five; five to one.

How many fingers have you on one hand, without the thumb? How many with the thumb?

How many are four rats and one rat? one and four?



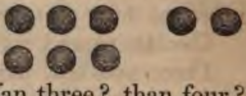
How many are three and two? two and three?

How many rats are three rats and one rat and one rat? two rats and one rat and two rats?

Five goats are in a pasture; if one of them leaps out, how many will remain?

One from five leaves how many? three from five? four from five?

John has five balls; Fred has three; how many more balls has John than Fred?



How many more are five than three? than four? than two? than one?

Here is the figure which stands for five: 5.

Make the figures 1, 2, 3, 4, 5, on your slate.

Lesson V.

Six Boys.

HERE is a group of boys at play, and one more boy is running to join them; tell me how many boys there are in all.

How many of the boys are standing still? How many are sitting? How many more boys are standing still than are sitting?

How many are five boys and one boy? one and five?

How many are four and two? two and four?

How many are three and three?

There were six men in this boat; one of the men has left the boat; you see him on the shore; how many men remain in the boat?

One from six leaves how many?

A little girl found two white pebbles on the beach, one blue pebble, one red pebble, and two brown pebbles; how many pebbles did she find?

She lost three pebbles; how many had she then?

Three from six leaves how many?

A fly has six legs; two legs and two legs and how many legs are six legs?

Here is the figure which stands for six: *6.*

Make 1. 2, 3, 4, 5, 6, upon your slate.

Lesson VI.

Do you see these men fishing? One man is raising the anchor; how many men are there in the boat?

Seven Men.

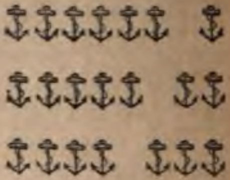
How many men are sitting in the boat? How many more men are standing than are sitting?

If each man catches one fish, how many fishes will six men catch?

How many are six and one? one and six?

How many more are seven than five? than two?

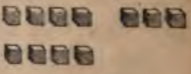
Four from seven leaves how many? three from seven?



A man sold one duck to one person, one to another, and five to another; how many ducks did he sell in all?

One duck and one duck and five ducks are how many?

Mary has seven blocks, Ira has three less than Mary; how many has Ira? How many are seven less three?



Name any two numbers which together make seven; any other two.

Name any three numbers which together make seven; any other three.

Here is the figure which stands for seven: *7.*

M [illegible] *1, 2, 3, 4, 5, 6, 7,* upon your slate.

Lesson VII.

In this picture one soldier is on horseback, and the rest are on foot; how many soldiers are on foot?

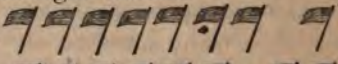
Eight Soldiers.

How many soldiers are seven soldiers and one soldier?

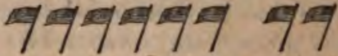
What number is one more than seven?

How many caps have eight soldiers?

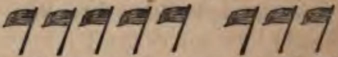
How many are seven flags and one flag?



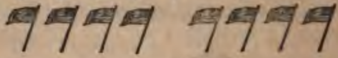
Two from eight leaves how many?



How many more are eight than five?



How many fours are there in eight?



How many fingers have you on one hand, without the thumb? How many on both hands?

How many are four and four?

A vessel went to sea with eight sailors, but she returned with one sailor less than she had when she went; with how many sailors did she return?

How many sailors are eight sailors less one sailor? less two sailors? less three? less four? less six?

Here is the figure which stands for eight: 8.

Make 1, 2, 3, 4, 5, 6, 7, 8, on your slate.

Lesson VIII.

Nine Doves.

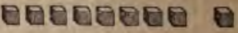
SEE these pretty doves around their little dove-house! How many are on the roof?

How many doves are on the roof and standing around the dove-house?

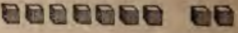
Here is another dove flying towards the house; how many doves in all?

Here is the figure which stands for nine: *9.*

How many are 8 blocks and 1 block? 1 and 8?

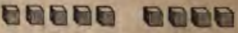


7 blocks from 9 blocks leaves how many? 2 from 9?



6 and how many are 9? 3 and how many are 9?

How many more are 9 than 5? than 4?



Harry had nine carrots, and gave one to his rabbit; how many had he left?

How many are nine carrots less one carrot?

How many are nine less seven? less six? less eight? less five?

In an orchard, there are three apple-trees, three pear-trees, and three plum-trees; how many trees are there in all?

Three trees and three trees and three trees are how many?

Make 1, 2, 3, 4, 5, 6, 7, 8, 9, on your slate.

Lesson IX.

SEE how neatly these books are placed in this book-rack!

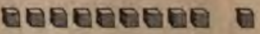
Ten Books.

How many books are there in the rack?

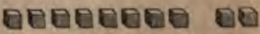
One book is lying on the table; point to it, and then tell me how many books there are in all.

Here are the figures which stand for ten: *10.*

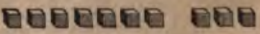
How many are 9 blocks and 1 block? 1 and 9?



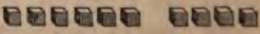
8 and what number are 10? 2 and what number?



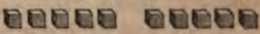
How many more are 10 than 7? than 3?



How many are 10 blocks less 4 blocks? less 6?



How many fives are there in ten?



If Jane has ten dolls, and all are dressed but three, how many are dressed?

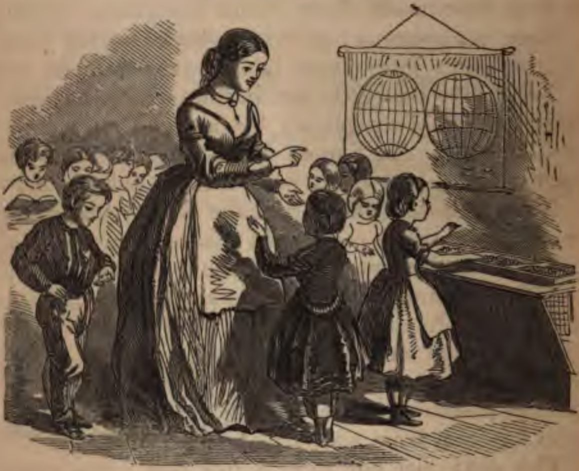
Myra paid ten cents for her book, and six cents for her slate; how many cents less did she pay for the slate than for the book? Six are how many less than ten?

If there are ten bricks in a row, and two of them have fallen down, how many are upright?

Two from ten leaves how many?

Make 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

Lesson X.



In this picture you see some little boxes with beans in them; the scholars count these beans.

I hope you have something to count in your school room.

Shall I tell you how these children count? Each child takes up one bean, and says, "One bean;" then he puts another bean with the first one, and says, "Two beans;" he puts another bean with his two beans, and says, "Three beans." This is counting.

You may count and tell how many girls there are before the teacher and near the boxes.

How many girls are there behind the teacher?

John, the little boy in the picture, had one bean in his right hand and one bean in his left hand; he put them together, and said, "One bean and one bean are two beans."

How many beans has the teacher in her left hand?

How many more beans has she than John?

Nellie, the first little girl in the picture, has two beans in each of her hands; how many beans has she in both? how many more beans has she than her teacher has? how many more has she than John?

Now hear the first girl at the boxes name every two numbers which can be put together to make five.

"Four beans and one bean are five beans.

"Three beans and two beans are five beans.

"Two beans and three beans are five beans.

"One bean and four beans are five beans."

The smallest girl at the boxes took six beans in her hand; she put one back; hear what she says:

"One bean from six beans leaves five beans."

The next girl has five beans; how many more must she take from the box to have eight?

If the other girl has five beans in her left hand, and enough in her right hand to make ten in both, how many has she in her right hand?

How many fives are there in ten?

How many beans are two beans and three beans and one bean?

How many books are two books and two books and two books?

How many feet have two girls and one boy?

If you had nine beans, an uld plant five of them, how many would yo t?

Now you may make so s yourselves *about the beans.*

Lesson XI.

1. In Luther's basket there are 5 eggs; 2 are duck's eggs and the rest are hen's eggs; how many are hen's eggs?

2. If Luther takes from the basket 3 of the eggs, how many eggs will remain in the basket?

3. Harry found 7 apples in the orchard; 2 were pippins, 2 were russets, and the rest were Porters; how many were Porters?

4. Harry ate 1 apple, gave 3 to his sister, and the rest to his mother; how many did he give to his mother?

5. There were 4 ladies and 2 gentlemen in a boat; if 2 ladies and 1 gentleman went on shore, how many persons remained in the boat?

6. If the party in the boat spent 1 hour in rowing, 3 hours in fishing, and 2 hours in sailing, how many hours did they spend in all?

7. A boy gave 2 cents for some nuts, 4 cents for some raisins, and then had 4 cents left; how many cents had he at first?

8. How many are 1 and 2 and 3? 2 and 2 and 2?

9. How many are 1 and 4 and 2? 3 and 2 and 2?

10. How many are 2 and 2 and 3? 1 and 3 and 2?

11. 2 and how many are 6? 4 and 2 and how many are 7?

12. 3 and 2 and how many are 7? 2 and 2 and how many are 7?

13. How many are 3 and 3 less 2? 2 and 5 less 4?

14. How many are 2 and 1 and 2 less 3?

Lesson XII.

1. David picked 2 quarts of cherries at one time, 3 at another, and 3 at another; how many quarts did he pick in all?

2. If David sold 4 quarts of his cherries, how many quarts were left?

3. On a shelf there were 10 books; 3 were reading-books, 3 were spellers, and the rest were geographies; how many books were geographies?

4. If 2 of the books of each kind were sold, how many books were sold in all?

5. How many books remained?

6. Walter received 3 cents for shovelling a path in the snow: with this money and the money he had before, he bought a paint-box for 9 cents; how much money had he before?

7. One afternoon 4 little girls and 3 little boys came to see Mary; how many children came to see her?

8. Mary's 2 brothers joined the party; how many besides Mary were in the party then?

9. How many are 2 and 3 and 3? 2 and 4 and 2?

10. How many are 5 and 2 and 2? 1 and 2 and 2 and 2 and 2?

11. 5 and 2 and how many are 9?

12. 4 and 1 and how many are 10?

13. Name the numbers in order from 1 to 10; *from 10 to 1.*

Lesson XIII.

CHILDREN, you have now learned something about the numbers, One, Two, Three, Four, Five, Six, Seven, Eight, Nine, and Ten.

You have learned to make the figures which stand for these numbers.

Each of the first nine numbers is represented by a single figure; thus,

1,	2,	3,	4,	5,	6,	7,	8,	9.
One.	**Two.**	**Three.**	**Four.**	**Five.**	**Six.**	**Seven.**	**Eight.**	**Nine.**

Besides these figures, here is a figure which stands for no number, ... 0

This figure is called Zero.

To represent ten, we write the figure 1, with 0 at the right of it; thus, ... 10

●●●●●●●●●● ●

Ten and one are eleven.

To represent eleven, we write the figure 1 (for 1 ten), and the figure 1 at the right of the first 1; thus, ... 11

●●●●●●●●●● ●●

Ten and two are twelve.

To represent twelve, we write the figure 1 *(for 1 ten)*, and the figure 2 at the right of *the 1; thus,* 12

●●●●●●●●●● ●●●
Ten and three are thirteen; written . . 13

●●●●●●●●●● ●●●●
Ten and four are fourteen; written . . 14

●●●●●●●●●● ●●●●●
Ten and five are fifteen; written . . . 15

●●●●●●●●●● ●●●●●●
Ten and six are sixteen; written . . . 16

●●●●●●●●●● ●●●●●●●
Ten and seven are seventeen; written . . 17

●●●●●●●●●● ●●●●●●●●
Ten and eight are eighteen; written . . 18

●●●●●●●●●● ●●●●●●●●●
Ten and nine are nineteen; written . . 19

●●●●●●●●●● ●●●●●●●●●●
Ten and ten are twenty; written . . . 20

How many boys are 10 boys and 1 boy?

How many balls are 10 balls and 2 balls? How many are 2 and 10?

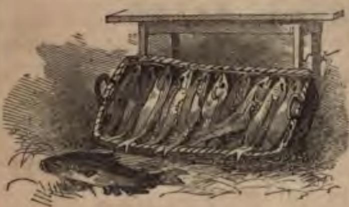
How many bats are 10 bats and 3 bats? How many are 3 and 10?

How many caps are 10 caps and 4 caps? How many are 4 and 10?

How many games are 10 games and 5 games?
How many are 10 and 6? 10 and 7?
How many are 10 and 8? 10 and 9?
How many are 10 and 10?
How many tens are there in twenty?
Write in figures on your slate, the numbers from *1 to 20.*

Lesson XIV.

HERE is a basket of fine fish, brought to market. How many fishes can you see in the basket and on the ground?



That is a codfish on the ground. It has two side fins, three back fins, one tail fin, and three other fins; how many fins has it?

How many are 10 and 1? 1 and 10? ■■■■■■■■■■ ■

9 from 11 leaves how many? 2 from 11? ■■■■■■■■■ ■■

8 and how many are 11? 3 and how many? ■■■■■■■■ ■■■

11 are how many more than 7? than 4? ■■■■■■■ ■■■■

5 are how many less than 11? ■■■■■■ ■■■■■

Rufus has harnessed his dog Hero, to give his sister and two other little girls a ride. How many girls are going to ride?

1 and 2 are how many?

8 and 3 are how many?

The last three questions are questions in Addition.

ADDITION is the putting together of two or more numbers to find their sum or amount.

What two numbers are put together in the question about Rufus and Hero?

What is their sum? *Answer.* 3 girls.

A cross, thus, +, stands for Addition. It is called *plus*. 10+1, read 10 plus 1, means 10 and 1.

If there were 11 sailors in a ship, and 5 of them were taken on shore in a boat, how many remained in the ship?

How many are 11 less 5?

The last two questions are questions in Subtraction.

SUBTRACTION is the taking of one number from another, to find the remainder or difference.

In the question about the sailors, how many sailors were taken from 11 sailors?

How many sailors remained? *Ans.* 6 sailors.

A short line, thus, —, stands for Subtraction. It is called *minus*. 11 — 5, read 11 minus 5, means 11 less 5.

This sign, =, means "equal to."

Repeat the tables:

1 and 1 are 2
2 and 1 are 3
3 and 1 are 4
4 and 1 are 5
5 and 1 are 6

6 and 1 are 7
7 and 1 are 8
8 and 1 are 9
9 and 1 are 10
10 and 1 are 11

1 from 2 leaves 1
1 from 3 leaves 2
1 from 4 leaves 3
1 from 5 leaves 4
1 from 6 leaves 5

1 from 7 leaves 6
1 from 8 leaves 7
1 from 9 leaves 8
1 from 10 leaves 9
1 from 11 leaves 10

Lesson XV.

Look at these busy little bees! What are bees good for?

Will you count them?

How many are there on the honeycomb?

How many are there on the ground?

Ten bees and two bees are how many bees?

The two on the ground are drones.

1. How many are 10 and 2? $2 + 10$? ■■■■■■■■■■ ■■

2. How many are 9 and 3? $3 + 9$? ■■■■■■■■■ ■■■

3. How many are 8 and 4? $4 + 8$? ■■■■■■■■ ■■■■

4. How many are 7 and 5? $5 + 7$? ■■■■■■■ ■■■■■

5. How many sixes are there in 12? ■■■■■■ ■■■■■■

6. What other two numbers besides the above make 12? *Ans.* 11 and 1 make 12.

7. Ann paid 4 cents for pins, 5 cents for tape, and had 2 cents left; how many cents had she at first?

Repeat the table:

1 and 2 are 3
2 and 2 are 4
3 and 2 are 5
4 and 2 are 6
5 and 2 are 7

6 and 2 are 8
7 and 2 are 9
8 and 2 are 10
9 and 2 are 11
10 and 2 are 12

SLATE EXERCISE IN ADDITION.

Copy the figures in each column, add the numbers upward, and write the sum under the line at the foot of the column.

	(1.)	(2.)	(3.)	(4.)	(5.)	(6.)	(7.)	(8.)
	2	1	3	2	3	4	5	2
	1	4	2	3	2	1	1	2
	1	2	1	2	3	2	3	4
Ans.	4	7	6					

NOTE. In adding the columns orally, the pupil should mention only the results; thus, in example (1.), he should not say 1 and 1 are 2, and 2 are 4, but simply 1, 2, 4.

8. There were 12 flies caught in a spider's web, but 9 of them got away; how many remained in the web?

9. 9 flies from 12 flies leaves how many?

10. Charles had 12 white mice, and gave away 2; how many had he left?

11. Nellie and Emma have 12 books together: 7 of the books belong to Nellie; how many belong to Emma?

12. How many are 12 less 7? 12 — 5?

13. John, Fred, and Rollo paid 12 cents for some pears: John paid 4 cents, Fred paid 4 cents, and Rollo paid the rest; how much did Rollo pay?

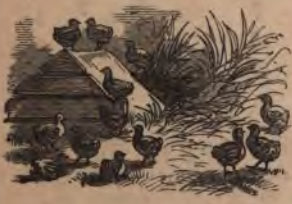
Repeat the table:

2 from 3 leaves 1
2 from 4 leaves 2
2 from 5 leaves 3
2 from 6 leaves 4
2 from 7 leaves 5

2 from 8 leaves 6
2 from 9 leaves 7
2 from 10 leaves 8
2 from 11 leaves 9
2 from 12 leaves 10

Lesson XVI.

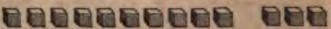
WHERE is the mother of these little chickens? The chickens on the roof, and those on the ground, in front of the hen-coop, belong to one brood; how many are there?



The other chickens, at the right, belong to another brood.

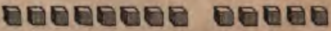
How many chickens are there in all?

1. How many are 10 + 3? 3 + 10?

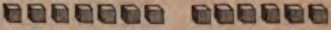


2. How many are 13 less 9? 13 — 4?

3. 8 and how many more are 13?



4. How many more are 13 than 7?



4. Name every two numbers which, added together, make 13. *Ans.* 12 and 1 make 13; 11 and 2 make 13; 10 and 3 make 13, &c.

6. A man has 8 dollars: when he gets 5 dollars more he can buy a barrel of flour; how many dollars must he pay for the barrel of flour?

Repeat the table:

1 and 3 are 4
2 and 3 are 5
3 and 3 are 6
4 and 3 are 7
5 and 3 are 8

6 and 3 are 9
7 and 3 are 10
8 and 3 are 11
9 and 3 are 12
10 and 3 are 13

SLATE EXERCISE IN ADDITION.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)	(7.)	(8.)
3	1	2	4	2	3	1	2
1	2	1	1	2	1	1	2
1	1	2	2	1	2	4	4
4	5	3	2	4	4	6	4

7. THE UNITED STATES FLAG has 13 stripes: 7 are red, the rest are white; how many are white?

8. If 3 red stripes and 3 white stripes are torn off from the flag, how many stripes will remain?

9. A lady went to a store to buy some goods: she had 13 dollars in her purse, and spent 5 of them; how many dollars had she then in her purse?

10. How many are 13 less 8? 13 — 12?

11. A letter-carrier, who had 13 letters to deliver, has delivered all but 1 of them; how many has he delivered?

12. Mary found 8 nuts under one tree and 5 under another; how many did she find under both?

13. She gave away 4 nuts and ate 2; how many had she left?

14. How many are 8 + 5 — 4 — 2?

Repeat the table:

3 from 4 leaves 1
3 from 5 leaves 2
3 from 6 leaves 3
3 from 7 leaves 4
3 from 8 leaves 5

3 from 9 leaves 6
3 from 10 leaves 7
3 from 11 leaves 8
3 from 12 leaves 9
3 from 13 leaves 10

Lesson XVII.

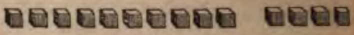
Do not be afraid, little girl! The sheep will not hurt you.

They think you have something for them.

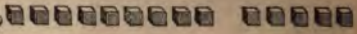
How many of the sheep are in the group around the little girl?

The sheep that you see by themselves belong to the same flock. How many sheep are there in all?

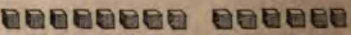
1. How many are 10 + 4? 4 + 10?



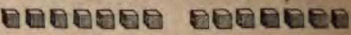
2. How many are 9 from 14? 5 from 14?



3. 8 and how many are 14?



4. 7 are how many less than 14?



5. How many are 3 and 1? 13 and 1?

6. Name every two numbers which, added together, make 14. *Ans.* 13 and 1; 12 and 2, &c.

7. Two men went from the same place: one went north 7 miles, and the other went south 7 miles; how far apart were they then?

Repeat the table:

1 and 4 are 5
2 and 4 are 6
3 and 4 are 7
4 and 4 are 8
5 and 4 are 9

6 and 4 are 10
7 and 4 are 11
8 and 4 are 12
9 and 4 are 13
10 and 4 are 14

SLATE EXERCISE IN ADDITION.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)	(7.)	(8.)
2	1	2	2	1	1	1	1
1	2	2	1	3	1	0	5
6	4	5	5	1	4	2	0
1	3	1	3	5	3	6	5
1	1	2	2	2	2	1	2

8. Emma had 8 questions to answer in Arithmetic, and 6 to answer in Geography; how many questions had she to answer in all?

9. A farmer owned 14 cows, but he has sold all but 2; how many cows has he sold?

10. If the farmer's red cow gives 14 quarts of milk in a day, and his white cow gives 3 quarts less, how many quarts does the white cow give?

11. A trader sold 14 dollars' worth of provisions to three men: to one man he sold 2 dollars' worth, to another 4 dollars' worth; how many dollars' worth did he sell to the third man?

12. If you take 2 + 4 from 14, how many will remain?

13. How many are 3 + 4 + 6 — 2 — 8?

Repeat the table:

4 from 5 leaves 1
4 from 6 leaves 2
4 from 7 leaves 3
4 from 8 leaves 4
4 from 9 leaves 5

4 from 10 leaves 6
4 from 11 leaves 7
4 from 12 leaves 8
4 from 13 leaves 9
4 from 14 leaves 10

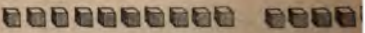
Lesson XVIII.

HERE you see a picture of a gold eagle and half-eagle. The eagle worth 10 dollars, an the half-eagle is wort 5 dollars.

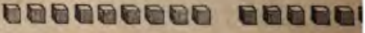
How many dollars a the eagle and half-eag together worth?

Those are half-eagl in the pile; how many half-eagles in the picture?

1. How many are 10 + 5?



2. 15 are how many more than 9?



3. How many are 15 less 8?

4. How many are 4 and 1? 14 + 1? 11 +

5. How many are 3 and 2? 13 + 2? 12 +

6. Name every two numbers which, added t gether, make 15.

7. In a family there were 7 sons and 8 daug ters; how many children were there in all?

8. A man caught a lot of fish, but he thre away 6 of them, and then had 9 of the lot left how many did he catch in all? 6 + 9?

Repeat the table:

1 and 5 are 6	6 and 5 are 11
2 and 5 are 7	7 and 5 are 12
3 and 5 are 8	8 and 5 are 13
4 and 5 are 9	9 and 5 are 14
5 and 5 are 10	10 and 5 are 15

Slate Exercise in Addition.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)	(7.)	(8.)
3	4	1	3	4	5	4	4
2	2	4	6	1	0	5	1
4	5	4	3	6	7	0	6
3	3	4	1	3	1	2	2

9. A man bought 15 pine-apples, but soon sold 7 of them; how many had he left?

10. He sold the largest pine-apple for 15 cents, and the smallest one for 4 cents less; what did he get for the smallest one?

11. How many are 15 less 4? 15 — 11? 15 — 7?

12. A boy, who had 15 lilies, sold all but 2 of them; how many did he sell?

13. How many are 15 less 2? 15 — 12? 15 — 3? 15 — 13?

14. In a street there were 15 doves picking up corn, but a dog frightened away 8 of them; how many remained?

15. 15 less 8 are how many?

16. Horace is 15 years old; if he is 6 years older than his brother Edmund, how old is Edmund?

17. 6 years from 15 years leaves how many?

Repeat the table:

5 from 6 leaves 1
5 from 7 leaves 2
5 from 8 leaves 3
5 from 9 leaves 4
5 from 10 leaves 5

5 from 11 leaves 6
5 from 12 leaves 7
5 from 13 leaves 8
5 from 14 leaves 9
5 from 15 leaves 10

Lesson XIX.

WHAT fruit is more luscious than a fine ripe pear! These are very fair, and no doubt they are sweet and juicy.

How many can you count in the basket? How many upon the table?

How many pears are there in the basket and on the table?

■■■■■■■■■■ ■■■■■■

1. How many are 10 and 6? 6 + 10?

■■■■■■■■■ ■■■■■■■

2. 16 are how many more than 9? than 7?

■■■■■■■■ ■■■■■■■■

3. How many are 8 and 8? How many 8's are there in 16? 8 from 16?

4. Mary has 5 cents; if she gets 1 cent more, how many cents will she then have?

5. Alice has 10 cents and 5 cents; if she gets 1 cent more, how many cents will she then have?

6. Name every two numbers which, added together, make 16.

7. Add by 2's to 16. *Ans.* 2, 4, 6, 8, &c.

Repeat the table:

1 and 6 are 7
2 and 6 are 8
3 and 6 are 9
4 and 6 are 10
5 and 6 are 11

6 and 6 are 12
7 and 6 are 13
8 and 6 are 14
9 and 6 are 15
10 and 6 are 16

SLATE EXERCISE IN ADDITION.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)	(7.)	(8.)
2	1	1	5	1	6	4	3
0	2	1	0	1	0	0	2
2	3	4	3	8	0	1	4
7	6	8	4	1	5	7	4
2	3	1	2	2	4	3	1

8. There were 16 persons in a horse car, but 11 of them got out; how many remained in the car?

9. One fare in the horse car is 7 cents; how much will 2 fares be?

10. If 16 cents are given to the conductor for 2 fares, how many cents should he return?

11. There were 16 houses in a block, but 7 of them were burned; how many remained?

12. John Rich agreed to work for me 16 days, but when he had worked 8 days he left me; how many more days ought he to work for me?

13. 16 are how many more than 8? 8 from 16?

14. What number put with 6 will make 16? with 9? with 12? with 13?

15. Subtract by 2's from 16. *Ans.* 16,14,12,&c.

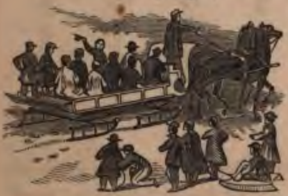
Repeat the table:

6 from 7 leaves 1
6 from 8 leaves 2
6 from 9 leaves 3
6 from 10 leaves 4
6 from 11 leaves 5

6 from 12 leaves 6
6 from 13 leaves 7
6 from 14 leaves 8
6 from 15 leaves 9
6 from 16 leaves 10

Lesson XX.

Away they go, o'er the ice and snow! Hear their voices ring out on the winter air! How gayly their horses trot along!



How many boys are riding?

Here, too, is a happy group on foot. How many are in this group? How many in all?

■■■■■■■■■■ ■■■■■■■

1. How many are 10 and 7? 7 + 10?

■■■■■■■■■ ■■■■■■■■

2. 9 and how many make 17? 8 and how many?

3. Lucy is 6 years old, her sister Annie is 10 years older than she; how old is Annie?

4. How old will Lucy be in 1 year more?

5. How old will Annie be in 1 year more?

6. How many are 6 and 1? 16 and 1?

7. Two men started from the same place, one went east 12 miles, and the other west 5 miles; how far apart were they then?

8. How many are 2 and 5? 12 + 5? 15 + 2?

9. Name every two numbers which, added together, make 17.

Repeat the table:

1 and 7 are 8
2 and 7 are 9
3 and 7 are 10
4 and 7 are 11
5 and 7 are 12

6 and 7 are 13
7 and 7 are 14
8 and 7 are 15
9 and 7 are 16
10 and 7 are 17

SLATE EXERCISE IN ADDITION.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)	(7.)	(8.)
2	3	1	1	3	1	5	4
3	2	4	5	6	0	0	5
4	2	5	1	0	6	1	0
3	7	2	4	5	6	8	2
3	2	4	3	1	1	2	5

10. There were 10 inches of snow on the ground yesterday, and enough more fell last night to make 17 inches; how many inches fell last night?

11. If 5 inches of these 17 inches of snow should melt away, how many inches would remain?

12. How many are 5 from 7? 5 from 17?

13. There are 17 pigs in a pen, 13 are white and the rest are black; how many are black?

14. 3 and how many are 7? 13 and how many are 17? 14 and how many are 17?

15. I bought a trunk for 11 dollars, and sold it again for 17 dollars; what did I gain?

16. How many more are 17 than 11? than 1?

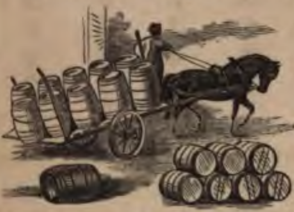
17. Subtract by 2's from 17. *Ans.* 17, 15, &c.

Repeat the table:

7 from 8 leaves 1
7 from 9 leaves 2
7 from 10 leaves 3
7 from 11 leaves 4
7 from 12 leaves 5

7 from 13 leaves 6
7 from 14 leaves 7
7 from 15 leaves 8
7 from 16 leaves 9
7 from 17 leaves 10

Lesson XXI.

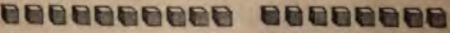


Drive on, my friend! How many barrels have you upon your dray? That is load enough for your beast.

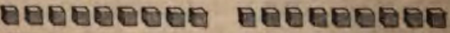
Drive on, and come again for the rest.

How many barrels are there on the ground?

How many barrels are there upon the dray and on the ground?



1. How many are 10 and 8? 8 + 10?



2. How many are 9 and 9? 9 from 18?

3. There are 8 cherry trees on each side of a walk, and 2 more trees in the yard; how many trees are there in all?

4. In the front of a house there are 3 windows in the basement, 3 in the second story, 4 in the third story, 4 in the next story, and 3 in the attic; how many windows are there in all?

5. How many are 3 and 3 and 4 and 4 and 3?

6. How many are 7 and 1? 17 + 1? 11 + 7?

7. Name every two numbers which, added together, make 18.

Repeat the table:

1 and 8 are 9
2 and 8 are 10
3 and 8 are 11
4 and 8 are 12
[illegible] 8 are 13

6 and 8 are 14
7 and 8 are 15
8 and 8 are 16
9 and 8 are 17
10 and 8 are 18

SLATE EXERCISE IN ADDITION.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)	(7.)	(8.)
7	3	5	7	3	3	9	5
3	4	6	3	7	7	5	0
2	9	2	3	3	4	1	9
2	1	3	3	2	2	2	3

8. In a park there were 18 deer: all but 4 of them escaped; how many escaped?

9. If a deer runs 18 miles in an hour, and a dog runs 15 miles in the same time, how many less miles in one hour does the dog run than the deer?

10. William had 18 marbles, but he lost 9 of them; how many had he then?

11. Joseph has 18 ears of corn, 3 of which are red, and the rest are white; how many are white?

12. 3 from 8 leaves how many? 18 — 3?

13. Carrie has 18 pins on her cushion, and 12 on her dress; how many more has she on her cushion than on her dress?

14. 8 are how many more than 2? 18 than 12?

15. 2 from 8 leaves how many? 12 from 18 leaves how many? 2 from 18?

Repeat the table:

8 from 9 leaves 1
8 from 10 leaves 2
8 from 11 leaves 3
8 from 12 leaves 4
8 from 13 leaves 5

8 from 14 leaves 6
8 from 15 leaves 7
8 from 16 leaves 8
8 from 17 leaves 9
8 from 18 leaves 10

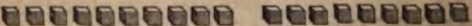
Lesson XXII.

THESE fowls in the water are as graceful as swan what are they? H many are there?

That flock in the ai shaped like what letter

How many are there the air?

How many fowls there in the water and in the air?



1. How many are 10 and 9? 9 + 10?

2. Name every two numbers which, added gether, make 19.

3. If a parrot cost 5 dollars, a cage 10 dolla and some seeds for feeding the bird dollars, what did all cost?

4. A man paid 18 dollars for dog, which was 1 dollar less than paid for his gun; what did he p for his gun?

5. How many are 8+1? 18+

6. How many are 1+8? 11+

7. Add by 3's from 3 to 18. *Ans.* 3, 6, 9, &

8. Add by 4's from 3 to 19. *Ans.* 3, 7, 11, &

Repeat the table:

1 and 9 are 10
2 and 9 are 11
3 and 9 are 12
4 and 9 are 13
are 14

6 and 9 are 15
7 and 9 are 16
8 and 9 are 17
9 and 9 are 18
10 and 9 are 19

SLATE EXERCISE IN ADDITION.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)	(7.)	(8.)
2	3	2	1	1	5	1	4
3	0	1	6	0	3	9	1
1	8	9	8	6	4	0	8
7	4	5	1	9	4	4	4
4	3	0	1	2	1	4	1

Here is the swan. What a graceful bird it is!

9. There were 19 swans sent to this country from Hamburg, and 2 of them died on the passage; how many still lived?

10. 12 of the swans which remained, were sent to New York, the rest were sent to Boston; how many were sent to Boston?

11. 2 from 7 leaves how many? 12 from 17?

12. Mr. Gage had 19 trees to set, and he has set 6 of them; how many has he still to set?

13. A man bought a load of hay for 16 dollars, and sold it for 19 dollars; how many dollars did he gain?

14. Subtract by 3's from 19. *Ans.* 19, 16, 13, &c.

Repeat the table:

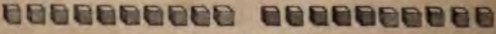
9 from 10 leaves 1
9 from 11 leaves 2
9 from 12 leaves 3
9 from 13 leaves 4
9 from 14 leaves 5
9 from 15 leaves 6
9 from 16 leaves 7
9 from 17 leaves 8
9 from 18 leaves 9
9 from 19 leaves 10

Lesson XXIII.

WHAT are these flowers? How many are there on the stalks at the right hand? How many are there on the stalks at the left hand?

How many flowers are there on all the stalks?

How many leaves are there on all the stalks?



1. How many are 10+10? How many 10's in 20?

2. A man bought a wheelbarrow for 16 dollars, and sold it so as to gain 4 dollars; how many dollars did he receive for it?

3. How many are 6 + 4? 16 + 4? 14 + 6?

4. One morning, early in the spring, Matilda found 6 flowers in blossom in her garden, 8 in her mother's garden, and 6 in her sister's garden; how many flowers did she find in all?

5. Mr. Flynn sold a bouquet for 18 cents, which was 2 cents less than he gave for it; what did he give for it?

6. How many are 8 + 2? 18 + 2? 12 + 8?

Repeat the table:

1 and 10 are 11
2 and 10 are 12
3 and 10 are 13
4 and 10 are 14
10 are 15

6 and 10 are 16
7 and 10 are 17
8 and 10 are 18
9 and 10 are 19
10 and 10 are 20

SLATE EXERCISE IN ADDITION.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)	(7.)	(8.)
3	1	6	3	2	5	1	2
5	7	0	2	9	0	2	8
6	7	9	7	4	6	7	0
2	2	3	4	1	5	7	8
2	1	1	3	1	3	1	1

Here is a picture of a gold coin, which is called a double eagle. It is worth 20 dollars.

7. If you should give a man a double eagle to pay him for something which is worth 15 dollars, how many dollars should he give you back?

8. 5 from 10 leaves how many? 15 from 20?

9. A boy, who owed 20 cents, paid 9 cents and 8 cents; how many cents did he still owe?

10. Harry wishes to buy a trunk which will cost 20 dollars; he has only 9 dollars; how many more dollars must he get before he can pay for a trunk worth 20 dollars?

11. How many are 10 less 9? 20—9? 20—19?

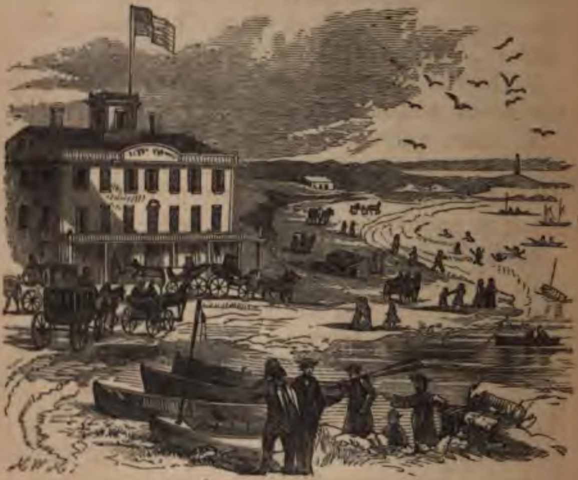
12. Subtract by 4's from 20.

Repeat the table:

10 from 11 leaves 1
10 from 12 leaves 2
10 from 13 leaves 3
10 from 14 leaves 4
10 from 15 leaves 5

10 from 16 leaves 6
10 from 17 leaves 7
10 from 18 leaves 8
10 from 19 leaves 9
10 from 20 leaves

Lesson XXIV.



How delightful it is to take a ride on the beach in the warm summer days! The sea breeze is very refreshing.

This is a fine hotel. Do you see the landlord standing in the piazza? He is counting the carriages in front of the hotel.

1. You may count them; how many are there?

2. How many are there upon the beach? How many are there in both places?

3. If there are 8 more carriages in the stable-yard, how many carriages are there in all?

4. How many boats can you count upon the sh ow many in the water? How many more ere in the water than upon the shore?

5. Here is a party that has just returned from fishing. The whole party caught 19 fish; the boatman caught all but 8 of them; how many did he catch? 8 and how many more are 19?

6. If the boatman sells 9 of the fish he caught, how many will he have left? 11 — 9?

7. How many persons beyond the fishing party can you count on foot upon the beach? All but those two ladies and the little girl nearest us are going to bathe; how many are going to bathe?

8. 3 from 14 leaves how many?

9. How many are now bathing? See what fun they are having in the rolling surf! When the whole party of bathers are in the water, how many will there be bathing? How many are 11 + 6?

10. The tide is going out; it has left some pretty things on the beach. Etta, the first little girl in the picture, has picked up 2 king-crabs, 1 star-fish, and 5 shells; how many things has she picked up?

11. James, the little boy beyond, has picked up 4 king-crabs, 2 star-fishes, and 3 shells; how many things has he picked up? How many more than Etta?

12. How many birds are flying in the air?

13. Yesterday James counted 8 birds more than are here to-day; how many did he count yesterday?

14. 12 + 8 are how many?

15. How many windows can you see in the second story of the hotel? How many in the third story? How many in both stories and in the attic?

16. 6 of these windows have the blinds open; how many have them shut?

17. How many are 9 + 9 + 2 — 6?

Lesson XXV.

1. In a school-yard there are 6 boys playing ball, 5 jumping rope, and 2 driving hoop; how many boys are there in the yard?

2. If there are 3 more boys belonging to the school, how many are there belonging to the school in all?

3. Maria found 8 peaches under one tree, and 9 under another; how many did she find under both?

4. Augusta found 4 peaches under one tree, and 6 under another; how many peaches did Augusta find under both trees?

5. How many more peaches did Maria find than Augusta?

6. Kate had 13 sheets of paper, Rose had 3 sheets, but each of the girls has used up 2 sheets; how many sheets has Rose left? How many sheets has Kate left?

7. There were 5 robins' nests in an orchard, with 17 little birds in them; one nest had 4 birds, another had 4, another had 3, and another had 2; how many had the other?

8. 5 of these little robins were killed by the cat, and the rest flew away; how many flew away?

9. Add by 3's from 1 to 19, and write the work upon your slate; thus,

$1 + 3 = 4$
$4 + 3 = 7$
$7 + 3 = 10$
&c., &c.

10. Subtract by 3's from 20, and write the work upon your slate; thus,

$20 - 3 = 17$
$17 - 3 = 14$
$14 - 3 = 11$
&c., &c.

Lesson XXVI.

1. FRANK has received 7 cents for doing an errand, 4 cents for some berries, and he had 8 cents before; how many cents has he in all?

2. If Frank spends 6 cents for a kite-line, and 7 cents for a fish-line, how many cents will he have left?

3. There are 20 trees in a park; 4 are beech, 5 are maple, 6 are oak, and the rest are spruce; how many are spruce?

4. If 4 of these trees should die, and 2 should be cut down, how many would remain?

5. Joseph bought 4 apples for 4 cents, and 12 apples for 14 cents; how many apples did he buy?

6. How many cents did he pay for all the apples?

7. William had 17 questions to answer, and he has answered 14 of them; how many has he still to answer?

8. 4 and how many are 7?

9. 14 and how many are 17?

10. Edward is 3 years old, his sister Grace is 13 years old; how old will each be in 2 years more?

11. How old was each 2 years ago?

12. Add by 4's from 1 to 17, and write the work upon your slate.

13. Add by 4's from 2 to 18; from 3 to 19.

NOTE TO THE TEACHER. Exercises similar to those in examples 12 and 13 of this lesson, and in examples, 9 and 10 of the previous lesson, should be assigned to the pupil as he progresses, till he becomes familiar with *adding and subtracting all the* numbers from 1 to 9.

Lesson XXVII.

ALL the numbers that we have used so far in this book are made up of single things or ones.

A single thing, or one, is called a UNIT.

1. How many units are there in the number two? *Ans.* Two units.

2. How many units are there in the number ten? *Ans.* Ten units.

3. How many tens are there in the number ten? *Ans.* One ten.

4. Then, how many units are equal to one ten?

5. How many tens and how many units are there in 11? *Ans.* 1 ten and 1 unit.

6. How many tens and how many units are there in 12? in 13? in 14? in 15? in 16? in 19?

7. How many tens are there in 20?

20 and 1 are twenty-one;	written	21
20 and 2 are twenty-two;	"	22
20 and 3 are twenty-three; . .	"	23
20 and 4 are twenty-four; . .	"	24
20 and 5 are twenty-five;	"	25
20 and 6 are twenty-six;	"	26
20 and 7 are twenty-seven; . .	"	27
20 and 8 are twenty-eight; . .	"	28
20 and 9 are twenty-nine; . .	"	29
20 and 10 are thirty;	"	30
30 and 1 are thirty-one; . . .	"	31

30 and 2 are thirty-two; . . . written 32
30 and 5 are thirty-five; . . . " 35
30 and 10 are forty; . . . . " 40
40 and 1 are forty-one; . . . " 41
40 and 3 are forty-three; . . . " 43
40 and 6 are forty-six; . . . " 46
40 and 10 are fifty; . . . . " 50
50 and 4 are fifty-four; . . . " 54
50 and 7 are fifty-seven; . . . " 57
50 and 10 are sixty; . . . . " 60
60 and 5 are sixty-five; . . . " 65
60 and 10 are seventy; . . . " 70
70 and 10 are eighty; . . . . " 80
80 and 10 are ninety; . . . . " 90
90 and 10 are one hundred; . . " 100

8. How many tens are there in 30? in 50?
9. How many tens and units in 21? in 23?
10. How many tens and units in 29? in 32?
11. How many tens and units in 42? in 47?
12. How many tens and units in 55? in 68?
13. How many tens and units in 78? in 84?
14. How many tens and units in 98? in 100?

SLATE EXERCISE.

1. Write twenty-two in figures; write thirty-two; forty-two; fifty-two; seventy-two; eighty-two.

2. Write thirty-three; forty-three; fifty-three; sixty-four; seventy-four; ninety-four.

3. Write twenty-five; thirty-five; forty-five; fifty-five; sixty-six; seventy-six; eighty-seven; ninety-six; ninety-eight.

4. Write thirty-eight; forty-eight; fifty-eight; sixty-nine; seventy-nine; eighty-nine; one hundred.

Lesson XXVIII.

CHILDREN, you have learned that 1 and 1 are 2; 2 *times* 1 means the same as 1 and 1.

1. 2 times 1 ox are how many oxen?

2. The farmer has 2 times one arm; how many arms has the farmer? How many are 2 times 1?

3. Each elephant has 1 trunk; how many trunks have 3 elephants?

4. How many are 1 and 1 and 1, or 3 times 1?

5. Each dog has 1 head; how many heads have 4 dogs?

6. How many are 1 + 1 + 1 + 1, or 4 times 1?

7. Add by ones from 1 to 10, writing each amount upon your slate, thus: 1, 2, 3, 4, 5, &c.

8. Subtract by ones from 10.

Repeat the table:

Once 1 is 1
2 times 1 are 2
3 times 1 are 3
4 times 1 are 4
5 times 1 are 5

6 times 1 are 6
7 times 1 are 7
8 times 1 are 8
9 times 1 are 9
10 times 1 are 10

Lesson XXIX.

1. A BAT has 2 ears; how many ears have 2 bats?

2. How many are 2 and 2, or 2 times 2?

3. How many twos are there in four?

4. A chicken has 2 wings; how many wings have 3 chickens?

5. How many are 2 + 2 + 2, or 3 times 2?

6. One bird has 2 legs; how many legs have 4 birds? 4 times 2 are how many?

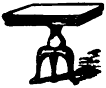
7. Add by twos from 2 to 20, and write each amount upon your slate; thus, 2, 4, 6, &c.

8. Subtract by twos from 20.

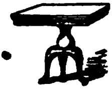
Repeat the tables:

Once 2 is 2	There are
2 times 2 are 4	2 twos in 4
3 times 2 are 6	3 twos in 6
4 times 2 are 8	4 twos in 8
5 times 2 are 10	5 twos in 10
6 times 2 are 12	6 twos in 12
7 times 2 are 14	7 twos in 14
8 times 2 are 16	8 twos in 16
9 *times* 2 are 18	9 twos in 18
10 times 2 are 20	10 twos in 20

Lesson XXX.



1. Each of these tables has 3 legs; how many legs have these 2 tables?



2. How many are 3 and 3, or 2 times 3?

3. If 1 knife has 3 blades, how many blades have 3 knives?

4. How many are 3 and 3 and 3, or 3 times 3?

5. One of these forks has 3 tines; how many tines have 4 forks?

6. How many are 3 + 3 + 3 + 3, or 4 times 3?

7. How many threes are there in 12? in 9?

8. Add by threes from 3 to 30, and write each amount upon your slate.

9. Subtract by threes from 30.

Repeat the tables:

Once 3 is 3	There are
2 times 3 are 6	2 threes in 6
3 times 3 are 9	3 threes in 9
4 times 3 are 12	4 threes in 12
5 times 3 are 15	5 threes in 15
6 times 3 are 18	6 threes in 18
7 times 3 are 21	7 threes in 21
8 times 3 are 24	8 threes in 24
9 times 3 are 27	9 threes in 27
10 [illegible] are 30	10 threes in 30

Lesson XXXI.

1. ONE wagon has 4 wheels; how many wheels have 2 wagons?

2. How many are 4 and 4, or 2 times 4?

3. How many fours are there in 8? How many twos?

4. One dog has 4 feet; how many feet have 3 dogs?

5. How many are 4 + 4 + 4, or 3 times 4?

6. One sheep has 4 legs; how many legs have 4 sheep? 4 times 4 are how many?

7. Add by fours from 4 to 40.

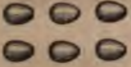
8. Subtract by fours from 40.

Repeat the tables:

Once 4 is 4	There are
2 times 4 are 8	2 fours in 8
3 times 4 are 12	3 fours in 12
4 times 4 are 16	4 fours in 16
5 times 4 are 20	5 fours in 20
6 times 4 are 24	6 fours in 24
7 times 4 are 28	7 fours in 28
8 times 4 are 32	8 fours in 32
9 times 4 are 36	9 fours in 36
10 times 4 are 40	10 fours in 40

Lesson XXXII.

1. Count these eggs; how many eggs are there?



2. Count them by twos; how many twos are there? Count them by threes; how many threes are there?

3. Which will contain more eggs, 2 nests with 3 eggs in each, or 3 nests with 2 eggs in each?

4. Is there any difference between 3 times 2, and 2 times 3?

5. Count these little chickens; how many are there? Count them by threes; how many threes are there?

6. Count them by fours; how many fours are there?

7. Is there any difference between 4 times 3, and 3 times 4?

8. There was a class of 4 boys who missed 3 questions each, and another class of 3 boys who missed 4 questions each; how many questions were missed by each class?

9. Can you place 6 blocks in two equal rows? How many blocks would there be in each row?

10. Can you place 6 blocks in three equal rows? How many blocks would there be in each row?

11. How can you place 8 blocks in equal rows? *Ans.* I can place them in 2 rows of 4 blocks each, or in 4 rows of 2 blocks each.

12. How can you place 9 blocks in equal rows? 4 blocks?

you place 5 blocks in equal rows? blocks? 7 blocks?

Lesson XXXIII.

1. In 1 boat there are 5 men; how many men are there in these 2 boats?

2. How many are 2 times 5? 5 times 2?

3. Each of these gates has 5 bars; how many bars are there in the 3 gates?

4. How many are 3 times 5? 5 times 3?

5. Here are 4 ladders, and each ladder has 5 rounds; how many rounds have all?

6. How many are 4 times 5? 5 times 4?

7. How many 5's are there in 20? in 15? in 10?

8. Add by 5's to 50. Subtract by 5's from 50.

Repeat the tables:

Once 5 is 5	There are
2 times 5 are 10	2 fives in 10
3 times 5 are 15	3 fives in 15
4 times 5 are 20	4 fives in 20
5 times 5 are 25	5 fives in 25
6 times 5 are 30	6 fives in 30
7 times 5 are 35	7 fives in 35
8 times 5 are 40	8 fives in 40
9 times 5 are 45	9 fives in 45
10 times 5 are 50	10 fives in 50

Lesson XXXIV.

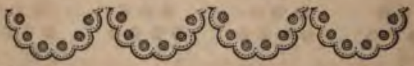
1. HERE are 2 pincushions, and each cushion has 6 pins in it; how many pins are there in both cushions?

2. How many are 2 times 6? 6 times 2?

3. 12 are how many times 6? times 4? times 3?

4. Mary puts 6 bows into 1 knot of ribbon; how many bows does she put into 3 knots?

5. How many are 3 times 6? 6 times 3?



6. If there are 6 eyelets in each of these 4 scallops, how many eyelets are there in all?

7. How many are 4 times 6? 6 times 4?

8. 30 are how many times 6? times 5? times 3?

9. Add by 6's to 60. Subtract by 6's from 60.

Repeat the tables:

Once 6 is 6	There are
2 times 6 are 12	2 sixes in 12
3 times 6 are 18	3 sixes in 18
4 times 6 are 24	4 sixes in 24
5 times 6 are 30	5 sixes in 30
6 times 6 are 36	6 sixes in 36
7 times 6 are 42	7 sixes in 42
8 times 6 are 48	8 sixes in 48
9 times 6 are 54	9 sixes in 54
10 times 6 are 60	10 sixes in 60

Lesson XXXV.

1. In each of these bunches of cherries there are 7 cherries; how many are there in the 2 bunches?

2. How many are 2 times 7? 7 times 2?

●●● ●●● ●●●
●●●● ●●●● ●●●●

3. In 1 week there are 7 days; how many days are there in 3 weeks?

4. How many are 3 times 7? 7 times 3?

●●● ●●● ●●● ●●●
●●●● ●●●● ●●●● ●●●●

5. If 1 loaf of bread costs 7 cents, what will 4 loaves cost?

6. How many are 4 times 7? 7 times 4?

7. If 1 ball costs 7 cents, what will 5 balls cost?

8. How many are 5 times 7? 7 times 5?

9. Add by 7's to 70. Subtract by 7's from 70.

Repeat the tables:

Once 7 is 7	There are
2 times 7 are 14	2 sevens in 14
3 times 7 are 21	3 sevens in 21
4 times 7 are 28	4 sevens in 28
5 times 7 are 35	5 sevens in 35
6 times 7 are 42	6 sevens in 42
7 times 7 are 49	7 sevens in 49
8 times 7 are 56	8 sevens in 56
9 times 7 are 63	9 sevens in 63
10 times 7 are 70	10 sevens in 70

Lesson XXXVI.

1. There are 8 trees on each side of a carriage-way; how many trees are there on both sides of the carriage-way? 8 and 8?

2. How many are 2 times 8? 8 times 2?

3. Here is a picture of 1 cord of wood. If a man can cut 8 cords of wood in 1 week, how many cords can he cut in 2 weeks?

4. 16 are how many times 8? times 2?

●●●● ●●●● ●●●●
●●●● ●●●● ●●●●

5. If it takes 8 shoes to shoe 1 ox, how many shoes will it take to shoe 3 oxen?

6. How many oxen could be shod with 16 shoes?

7. How many 8's in 16? in 24?

8. Add by 8's to 80. Subtract by 8's from 80.

Repeat the tables:

Once 8 is 8	There are
2 times 8 are 16	2 eights in 16
3 times 8 are 24	3 eights in 24
4 times 8 are 32	4 eights in 32
5 times 8 are 40	5 eights in 40
6 times 8 are 48	6 eights in 48
7 times 8 are 56	7 eights in 56
8 times 8 are 64	8 eights in 64
[illegible]s 8 are 72	9 eights in 72
8 are 80	10 eights in 80

Lesson XXXVII.

1. THERE are 9 girls on each of these settees; how many girls are there on the 2 settees?

2. How many are 2 times 9? 9 times 2?

3. 18 are how many times 9? times 6? times 3?

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●●●●● ●●●●● ●●●●●

4. How many dollars must be paid for 3 boxes of ribbons at 9 dollars a box?

5. 3 times 9 are how many? 9 times 3?

●●●● ●●●● ●●●● ●●●●
●●●●● ●●●●● ●●●●● ●●●●●

6. If a deer runs 9 miles in 1 hour, how many miles will he run in 4 hours?

7. 4 times 9 are how many? 9 times 4?

8. How many times 9 are there in 36? in 27?

9. Add by 9's to 90. Subtract by 9's from 90.

Repeat the tables:

Once 9 is 9	There are
2 times 9 are 18	2 nines in 18
3 times 9 are 27	3 nines in 27
4 times 9 are 36	4 nines in 36
5 times 9 are 45	5 nines in 45
6 times 9 are 54	6 nines in 54
7 times 9 are 63	7 nines in 63
8 times 9 are 72	8 nines in 72
9 times 9 are 81	9 nines in 81
10 times 9 are 90	10 nines in 90

Lesson XXXVIII.

1. In each of these pictures there are 10 blossoms; how many blossoms are there in the 2 pictures.

2. How many are 2 times 10? 10 times 2?

●●●●● ●●●●● ●●●●●
●●●●● ●●●●● ●●●●●

3. If on 1 jacket there are 10 buttons, how many buttons are there on 3 jackets?

4. 3 times 10 are how many? 10 times 3?

5. 30 are how many times 10? times 3? times 6?

●●●●● ●●●●● ●●●●● ●●●●●
●●●●● ●●●●● ●●●●● ●●●●●

6. If 1 pound of cheese costs 10 cents, how many cents must I pay for 4 pounds?

7. 4 times 10 are how many? 10 times 4?

8. 40 are how many times 10? times 4? times 8?

9. Add by 10's to 100. Subtract by 10's from 100.

Repeat the tables:

Once 10 is	10	There are	
2 times 10 are	20	2 tens in	20
3 times 10 are	30	3 tens in	30
4 times 10 are	40	4 tens in	40
5 times 10 are	50	5 tens in	50
6 times 10 are	60	6 tens in	60
7 times 10 are	70	7 tens in	70
8 times 10 are	80	8 tens in	80
9 times 10 are	90	9 tens in	90
[illegible] 10 are	100	10 tens in	100

Lesson XXXIX.

1. If Edward plays 2 games each day of his vacation, how many games will he play in 3 days? Why?

Solution. If he plays 2 games in 1 day, in 3 days he will play 3 times 2 games. 3 times 2 games are 6 games; therefore he will play 6 games in 3 days.

2. Frank recites 2 lessons in Arithmetic each day; how many lessons will he recite in 5 days? Why?

3. One house-fly has 2 wings; how many wings have 8 house-flies? Why?

4. How many are 4 times 2? 7 times 2? 9 times 2?

5. Isaac picked up 2 burrs; each burr had 3 chestnuts in it; how many chestnuts were there in all? Why?

In this question, the three chestnuts are taken two times. When the same number is taken a number of times, the process is called Multiplication.

In the question about Edward and the games, how many times 2 games did Edward play?

Is this question a question in Multiplication?

Can you make a question in Multiplication? Try?

A cross, thus, ×, stands for Multiplication.

$4 \times 3 = 12$, means 4 taken 3 times equals 12, and is read, 4 multiplied by 3 equals 12.

6. Mr. Howe has 4 rows of trees, and in each row there are 3 trees; how many trees are there in all? Why?

7. How many are 3×4? 3×5? 3×8?

Lesson XL.

1. If Mr. Wise can ascend in his balloon 4 times in 1 week, how many times can he ascend in 3 weeks? Why?

2. If a balloon takes up 4 persons each time it ascends, how many persons will it take up in ascending 5 times? Why?

3. The dragon-fly has 4 wings; how many wings have 4 dragon-flies?

4. What will 6 pencils cost at 4 cents a pencil?

5. What will 7 oranges cost at 4 cents an orange?

6. How many are 4 × 2? 4 × 8?

7. How many are 4 × 10? 4 × 9?

8. John can weed his garden in 5 days by working 2 hours a day; in how many days can he weed it by working 1 hour a day? Why?

9. How many are 5 × 7? 5 × 9? 5 × 10?

Exercise in Addition.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)	(7.)	(8.)
2	1	3	4	4	5	1	1
3	0	0	8	3	0	1	2
1	9	0	2	8	2	9	3
2	3	5	2	1	10	4	8
7	3	10	2	2	2	1	5
4	3	2	2	1	1	2	1

Note. This exercise and the following exercises in Addi- *ion may* be performed orally by the pupil at the time of *itation, or* be used as slate exercises, at the option of the *cher.* e 23, Note.

Lesson XLI.

1. Nellie knits 6 times round her mitten every day; how many times does she knit round in 6 days? in 8 days? Why?

2. Which would be more work, to knit 6 times round every day for 5 days, or 5 times round every day for 6 days? Why?

3. Nellie, Mary, and Jane have each new plaid dresses; if it took 6 yards to make 1 dress, how many yards did it take to make 3 dresses?

4. How many are 6×4? 6×6? 6×7? 6×9?

5. How many are 6×2? 12+6? 12—6?

6. Martha reads 7 pages every day; how many pages does she read in 2 days? in 4 days?

7. How many are 7×8? 7×5? 7×7? 7×9?

8. There are 7 days in 1 week; how many days are there in 4 weeks?

9. Which would cost more, 2 oranges at 7 cents apiece, or 3 oranges at 5 cents apiece? How much more?

10. James spent a day in the city, and bought for his dinner 1 dish of oysters for 15 cents, and 2 cream-cakes at 3 cents apiece; how many cents did he pay for his dinner?

11. He bought for his supper 3 rolls at 4 cents apiece, and 1 glass of milk for 6 cents; how many cents did his supper cost him?

12. How many more cents did he pay for his dinner than for his supper?

Lesson XLII.

1. THE cabinet-maker has just finished this nice table. He will sell it for 8 dollars. If he sells 1 table for 8 dollars, for how many dollars will he sell 4 tables? Why?

2. What cost 5 clocks at 8 dollars apiece?

3. If a dog, while chasing a fox, runs 8 miles in an hour, how far will he run in 3 hours?

4. How many are 8 × 6? 8 × 8? 8 × 9?

5. When 1 dollar will pay for 9 railroad tickets, how many tickets may be bought for 5 dollars?

6. What cost 6 loads of hay at 9 dollars a load?

7. What cost 3 oranges at 9 cents an orange?

8. How many are 9×4? 9×7? 9×10? 9×8?

9. If a bushel of potatoes lasts 2 persons 10 weeks, how many weeks will it last 1 person?

10. How many are 10×2?

11. What cost 4 sheep at 10 dollars apiece?

12. How many are 10×3? 10×5? 10×6?

EXERCISE IN ADDITION.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)	(7.)	(8.)
2	2	6	6	7	5	7	7
6	2	4	3	4	4	5	5
4	6	9	7	7	3	7	5
3	3	3	4	4	5	3	3
3	7	5	6	3	6	6	4
[illegible]	[illegible]	4	4	5	5	5	8
[illegible]	[illegible]	8	7	9	8	7	7

Lesson XLIII.

1. Here is Miss Nellie again, knitting mittens for her brothers. How many mittens make a pair?

2. If Nellie knits 4 mittens, how many pairs of mittens will she knit? Why?

Solution. If 2 mittens make a pair, she will knit as many pairs as there are 2's in 4. There are two 2's in 4; therefore she will knit 2 pairs.

3. A man made 8 shoes in a day; how many pairs of shoes did he make? Why?

4. How many 2's are there in 10? in 14?

5. If 1 whistle costs 3 cents, how many whistles can be bought for 6 cents? for 9 cents?

6. Here are 8 horse-shoes; if 4 shoes will shoe a horse, how many horses can be shod with 8 shoes? Why?

7. How many times 4 shoes are there in 8 shoes?

In these questions we find how many times one number is contained in another number. This process is called Division.

A straight line, with a dot above and below it, thus, ÷, stands for Division.

$15 \div 3 = 5$, means 15 divided by 3 equals 5.

8. In an orchard there are 12 trees in rows: in each row there are 3 trees; how many rows are there?

9. *How many* are $12 \div 3$? $18 \div 3$? $24 \div 3$?

Lesson XLIV.

1. This courier is sent away with a message. How fast he rides! If he rides 1 mile in 4 minutes, how many miles will he ride in 12 minutes? in 20 minutes? Why?

2. How many 4's are there in 20? in 32?

3. How many hats, at 4 dollars for 1 hat, may be bought for 16 dollars? for 24 dollars?

4. A little boy, who had 20 acorns, gave 5 acorns apiece to some squirrels; to how many squirrels did he give the acorns?

5. To how many squirrels could he have given the acorns, if he had given them 4 apiece? How many are 20 divided by 5?

6. How many 5's are there in 6 times 4 plus 1?

7. How many are 40 ÷ 4? 40 ÷ 5?

8. How many dresses, of 6 yards each, can be made from 30 yards? from 42 yards?

9. How many are 7 times 4, less 3 times 3?

10. 2 times 3, plus 2, are how many times 4?

Exercise in Addition.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)	(7.)	(8.)
6	5	5	7	4	8	5	9
5	6	6	4	6	2	7	6
5	8	4	2	6	6	5	7
4	5	5	8	1	2	6	7
9	1	5	4	3	5	2	5
5	6	6	6	6	6	7	7
[illegible]	9	7	8	6	5	7	9

Lesson XLV.

1. If 1 kite-line costs 6 cents, how many kite-lines can be bought for 12 cents? Why?

2. If Thomas gets 8 cents for making 1 kite, how many kites must he make to get 32 cents? Why?

3. How many times 6 are there in 12? in 30?

4. How many times 8 are there in 16? in 32?

5. Mary paid 30 cents for some ribbon at 6 cents a yard; how many yards did she buy?

6. In a school of 28 scholars, there are 7 scholars in each class; how many classes are there?

7. If a ship sails 7 miles an hour, in how many hours will she sail 35 miles?

8. Emma bought some buttons at 8 cents a dozen; how many dozen could she buy for 24 cents?

9. How long will it take a man to ride 40 miles at the rate of 8 miles an hour?

10. How many times can 6 be subtracted from 24? 7 from 21?

11. How many sheets of drawing paper, at 6 cents a sheet, can be bought for 18 cents? for 36 cents?

12. How many drawing pencils, at 7 cents apiece, can be bought for 14 cents? for 42 cents?

13. How many drawing patterns, at 8 cents a pattern, can be bought for 48 cents? for 56 cents?

14. 5 plus 5, plus 2, divided by 6, equals how many?

15. 9 divided by 3, less 1, multiplied by 3, plus 1, plus 1, divided by 2, equals how many?

Lesson XLVI.

1. If this tiger is 9 years old, and the man is 45 years old, the man is how many times as old as the tiger?

2. 45 are how many times 9?

3. If a tiger eats 10 pounds of meat a day, in how many days will he eat 30 pounds?

4. If meat is worth 9 cents a pound, how many pounds can be bought for 27 cents? for 54 cents?

5. If a bird destroys 10 insects every hour, in how many hours will it destroy 100 insects?

6. Myra can pick 7 quarts of berries in a day; in how many days can she pick 70 quarts?

7. If Myra sells her berries at 10 cents a quart, how many quarts must she sell to get 80 cents?

8. $9 \div 9$? 9×9? $19 - 9 + 9 + 9$?

9. From 8×4 take $32 \div 4$.

Exercise in Addition.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)	(7.)	(8.)
9	7	9	7	9	9	7	8
1	5	2	3	2	4	8	9
5	7	6	7	9	8	3	2
7	3	1	6	9	2	6	9
7	8	9	3	8	9	7	7
9	9	9	9	2	9	9	7
		5	7	8	3	9	4

Lesson XLVII.

HERE is Mr. Brown ploughing a field for Mr. Smith. Mr. Brown charges 5 dollars a day for himself and his horses.

1. If he charges 2 dollars a day for each of his horses, how many dollars does he charge for both? How many dollars does he charge for himself?

2. Take 2 times 2 from 5, and tell me how many will remain.

3. 5 are how many times 2, and what number remains? *Ans.* 2 times 2, and 1 remains.

4. Agnes has 7 cents, with which she wishes to buy oranges at 3 cents apiece; how many oranges can she buy, and how many cents will she have left?

Solution. If she can buy 1 orange for 3 cents, for 7 cents she can buy as many oranges as there are 3's in 7. There are two 3's in 7, and 1 remains; therefore she can buy 2 oranges, and she will have 1 cent left.

5. How many bunches of matches, at 5 cents a bunch, can be bought for 11 cents? and how many cents will remain?

6. How many loaves of bread, at 6 cents a loaf, can be bought for 13 cents? and how many cents will remain?

7. A man has 14 quarts of milk in cans which hold 4 quarts each: all the cans are full but one; how many cans are full? how many quarts are there in the *can which* is not full?

Lesson XLVIII.

1. Mr. Evans bought some geese at 2 dollars apiece, and gave 7 dollars in payment for them; how many geese could he buy, and how many dollars should be returned to him?

2. How many 2's can be taken from 7, and what number will remain?

3. If you had 13 cents, how many cakes could you buy at 3 cents apiece, and how many cents would remain?

4. If you had 25 cents, how many picture books could you buy at 10 cents apiece, and how many cents would remain?

5. How many times is 4 contained in 14, and what remains? in 15? in 17? in 21? in 25?

6. If you had 26 cents, and should give to 3 of your sisters 7 cents apiece, how many cents would you have left?

Exercise in Addition.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)	(7.)	(8.)
8	8	9	9	7	8	9	7
3	5	5	9	7	9	5	9
9	2	9	8	2	2	5	9
8	7	7	8	9	6	9	8
0	2	8	2	3	9	5	6
5	6	0	8	9	5	9	9
8	2	1	9	3	10	10	6

NOTE. *For* further practice in Addition, see Review *le, page 95.*

Lesson XLIX.

1. IF you had 36 cents, how many pigeons, at 10 cents apiece, could you buy, and how many cents would you have left?

2. How many apples, at 2 cents apiece, could you buy with the money you would have left?

3. How many times are 10 cents contained in 36 cents, and how many cents remain? in 42 cents? in 53 cents?

4. How many times are 9 cherries contained in 19 cherries, and how many cherries remain? in 20 cherries? in 27 cherries? in 28 cherries?

5. Mr. Winn has an orchard in which he can set 8 trees in a row, and he has 30 trees to set. How many rows can he set, and how many trees will he have left?

6. 15 are how many times 3? 5? 7? 2? 8?

7. 23 are how many times 5? 4? 3? 6? 9? 10? 7? 8?

8. Name the numbers, from 6 to 36, which leave no remainder when they are divided by 6.

Ans. 6, 12, 18, &c.

9. What are these numbers called?

Ans. The multiples of 6.

10. What are the multiples of 4, from 4 to 40?

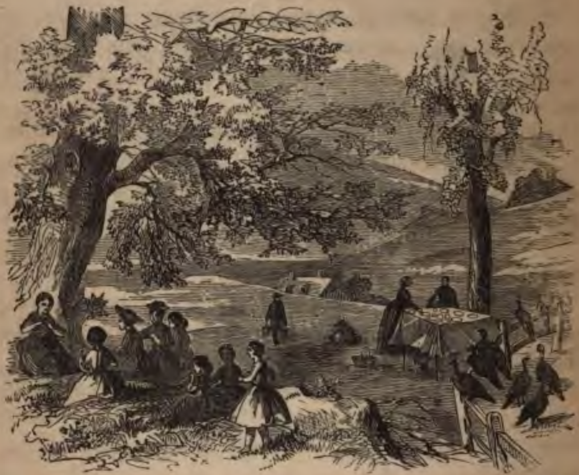
Ans. 4, 8, 12, 16, 20, 24, &c.

11. Name the multiples of 5, from 5 to 50.

12. Name the numbers from 1 to 12, which leave a remainder, when they are divided by 5.

Ans. 1, 2, 3, 4, 6, &c.

Lesson L.



1. LITTLE Alice is visiting at her aunt Mary's. It is now 21 days since she left her home; how many weeks is it?

2. To-morrow she will return home, and she is having a "tea party" with her little friends. That is Alice in the front of the picture. How many girls can you count in all?

3. The girls have been swinging and playing ball, and now they are making wreaths of leaves from that noble oak under which they are sitting. They
e making wreaths to trim the table with; if each
l makes 3 wreaths, how many wreaths will 8 girls
ke?

Mary has come from the house with

Jane, and they are arranging the table under the elm. How many plates are there on the table?

5. On 8 of these plates they are going to put some biscuits, some cake, and some fruit for the girls to eat. They have 16 biscuits; if they put 1 biscuit on each of the plates, how many will they have left to put on a plate by themselves?

6. They have 26 little cakes; if they put 2 on each of the 8 plates, how many will they have left to put by themselves?

7. They put 3 pears on each of the 8 plates, and had 2 pears left; how many pears were there in all?

8. Alice's uncle is bringing a pail of water and a pail of milk from the farm-house over the hill. All the children are fond of milk. If there are 9 quarts of milk in the pail, and they drink 3 quarts, how many quarts will be left?

9. If 1 quart is worth 6 cents, how many cents are 6 quarts worth?

10. If a cow will give 8 quarts of milk in a day, how many quarts will she give in a week?

11. The turkeys have come to the party too. How many are roosting on the fence? How many are on the ground?

12. If the turkeys on the fence weigh 8 pounds apiece, how many pounds do they all weigh?

13. If the turkeys on the ground weigh 6 pounds apiece, how many pounds do they all weigh?

14. If each of the 8 turkeys will weigh 10 pounds next Thanksgiving, how many pounds will they all weigh then?

15. How many more pounds will all the turk weigh then, than they weigh now?

Lesson LI.

1. Mary and Jane had 4 pears to divide equally between them. So Mary took 1 pear and Jane took 1 pear; then Mary took another and Jane took another; how many pears had each of the girls then?

2. Dora has 6 plants, which she wishes to set in 2 rows, having the same number of plants in each row; how many plants must she set in each row?

3. James and George divided 8 nuts equally between them; how many nuts did each boy take?

4. When any number is divided into two equal parts, what is one of the parts called?

Ans. One half of the number.

5. One half of 4 pears are how many pears?

6. One half of 8 nuts are how many nuts?

7. What is one half of 4 apples? of 2 oranges? of 10 cherries? of 12 birds? of 8 cents?

8. If Maria paid 4 cents for 2 peaches, how many cents did she pay for 1 peach? Why?

Solution. If she paid 4 cents for 2 peaches, for 1 peach she paid one half of 4 cents, or 2 cents; therefore she paid 2 cents for 1 peach.

9. If 2 tops cost 14 cents, what will 1 top cost? Why?

10. If 2 dolls cost 16 cents, what will 1 doll cost? Why?

11. If 18 plums are divided equally between 2 s, how many plums will each boy have?

12. If 9 trees are set in 3 equal rows, how many trees are there in each row?

13. When any number is divided into three equal parts what is one of the parts called?

Ans. One third of the number.

14. One third of 6 plums are how many plums?

15. What is one third of 9 pears? of 12 dolls? of 18 tops? of 21 slates?

16. If 3 pencils cost 9 cents, how many cents will 1 pencil cost? Why?

17. If 12 peaches can be bought for 3 cents, how many peaches can be bought for 1 cent?

18. If 4 girls share 8 yards of ribbon equally among them, how many yards will each girl have?

19. When any number is divided into four equal parts, what is one of the parts called?

Ans. One fourth of the number.

20. What is one fourth of 8 yards? of 12 yards?

21. If 16 fishes are divided equally among 4 men, how many fishes will each man receive? Why?

22. If 20 boys can sit at 4 desks, how many boys can sit at 1 desk?

23. 5 boys shared 10 dollars equally among them; how many dollars did each boy have?

24. When any number is divided into five equal parts, what is one of the parts called?

Ans. One fifth of the number.

25. What is one fifth of 10 dollars? of 15 men? of 5 leaves?

26. If 5 inkstands cost 20 cents, what will 1 inkstand cost? Why?

27. If 5 loaves of bread cost 30 cents, what will 1 loaf cost?

Lesson LII.

1. Captain Lowe divided 6 ostrich eggs equally among his 6 children; how many eggs did he give to each child?

2. When any number is divided into six equal parts, what is one of the parts called?

Ans. *One sixth* of the number.

3. What is one sixth of 6 pins? of 12 books? of 24 beans? of 36 nails?

4. When any number is divided into seven equal parts, what is one of the parts called?

Ans. *One seventh* of the number.

5. What is one seventh of 7 chairs? of 14 brushes? of 21 cups? of 35 spoons?

6. When any number is divided into eight equal parts, what is one of the parts called?

Ans. *One eighth* of the number.

7. What is one eighth of 8 tops? of 16 pens? of 24 doves? of 40 flies?

8. When any number is divided into nine equal parts, what is one of the parts called?

Ans. *One ninth* of the number.

9. What is one ninth of 9 sheep? of 18 hens? of 36 boys? of 90 girls?

10. When any number is divided into ten equal parts, what is one of the parts called?

Ans. *One tenth* of the number.

11. What is one tenth of 10 men? of 20 horses? of 50 apples? of 70 geese?

12. Which would be the larger number, 1 fifth 30 apples, or 1 sixth of them?

13. Alvin found 10 kinds of beans in his father's store, but Henry found only 1 half as many kinds; how many kinds did Henry find?

14. What is 1 half of 10? of 16?

15. Mary found 18 different kinds of grasses during her vacation, but Etta found only 1 third as many kinds; how many kinds did Etta find?

16. How many more kinds did Mary find than Etta?

17. What is 1 third of 18? 18 — 6?

18. Horace counted 16 snowbirds picking up crumbs near the door, but 1 fourth of them were frightened, and flew away; how many flew away? how many remained?

19. What is 1 fourth of 16? 16 — 4?

20. Thomas divided 24 roses equally among 6 little girls; how many roses did he give to one little girl?

21. He divided 24 lilies among 8 little boys; how many lilies did each boy receive?

22. What is 1 sixth of 24? 1 eighth of 24?

23. John has 7 buttons on his jacket; if his mother paid 14 cents for them all, how many cents did she pay for one button?

24. What is 1 seventh of 14? of 21?

25. If 48 girls can be seated on 8 settees, how many girls can be seated on one settee?

26. What is 1 eighth of 48? of 56?

27. If it takes 18 yards of cloth to make 9 aprons, how many yards does it take to make one apron?

28. What is 1 ninth of 18? of 27?

29. If it takes 30 skeins of yarn to knit 10 pairs of stockings, how many skeins does it take to knit one pair?

Lesson LIII.

1. If it costs 8 cents to fill this oil-can twice with oil, how many cents will it cost to fill it once?

2. How many cents will it cost to fill it three times?

3. What is 1 half of 8? 3 times 1 half of 8?

4. A baker put 10 pounds of flour into 10 loaves of bread; how many pounds did he put into 1 loaf? How many pounds did he put into 4 loaves?

5. What is 1 tenth of 10? 4 times 1 tenth of 10?

6. If 6 cakes cost 12 cents, what will 1 cake cost? what will 3 cakes cost?

7. What is 1 sixth of 12? 3 times 1 sixth of 12?

8. If 7 pears cost 28 cents, what will 2 pears cost? Why?

Solution. If 7 pears cost 28 cents, 1 pear will cost one seventh of 28 cents, or 4 cents, and 2 pears will cost 2 times 4 cents, or 8 cents; therefore, 2 pears will cost 8 cents.

9. How many are 2 times 1 seventh of 28?

10. If 5 pears cost 10 cents, what will 6 pears cost?

11. How many are 6 times 1 fifth of 10?

12. If 6 eggs cost 18 cents, what will 8 eggs cost?

13. If 12 cents will pay for 4 lemons, how many cents will pay for 5 lemons? for 10 lemons?

14. If 36 cents will pay for 3 balls, how many cents will pay for 2 balls?

15. How many are 8 times 1 third of 18?

16. How many are 10 times 1 sixth of 12?

17. How many are 3 times 1 fourth of 36?

Lesson LIV.

1. CHARLIE sold 4 of his chickens at 6 cents apiece; how many cents did he receive for them?

2. He spent the money which he received, for drawing-pencils, at 8 cents apiece; how many drawing-pencils did he buy?

3. Homer bought 6 oranges at 5 cents apiece; what did they cost?

4. He paid for the oranges with apples at 3 cents apiece; how many apples did it take?

5. 4 times 5 are how many times 2?

6. Horace bought 9 pencils at 4 cents each; what did they cost?

7. He paid for the pencils with melons at 6 cents apiece; how many melons did it take to pay for them?

8. 9 times 4 are how many times 6?

9. How many eggs, at 2 cents apiece, will pay for 1 pound of sugar at 10 cents a pound?

10. How many eggs will pay for 2 pounds of sugar at the same price?

11. 2 times 10 are how many times 2?

12. At 3 cents apiece, how many pears will pay for 9 peaches at 2 cents each?

13. How many cabbages, at 6 cents a head, must be given for 3 brushes at 8 cents apiece?

14. How many books, at 8 cents apiece, will pay for 4 hours' work at 10 cents an hour?

15. 6 times 2 are how many times 3?

16. 5 times 8 are how many times 10?

Lesson LV.

1. MARGARET bought 5 pears at 4 cents apiece, and then had 7 cents left; how many cents had she at first?

2. How many are 3 × 4 + 3? 4 × 4 + 5? 5 × 5 + 6?

3. Susan had 35 cents, and bought 4 skeins of yarn at 8 cents each; how many cents had she left?

4. Take 4 times 8 from 35; 3 times 8 from 30.

5. Take 8 times 8 from 68; 5 times 8 from 40.

6. If you can buy 4 marbles for 1 cent, how many marbles can you buy for 10 cents?

7. If you can buy 28 marbles for 7 cents, how many marbles can you buy for 9 cents?

8. Rose has 17 cents; Mary has 7 cents; if they put their money together and buy 8 pink-roots with it, how many cents do they pay for each pink-root?

9. What do you multiply by to get twice a number?

10. John is 9 years old; his sister is twice as old and 2 years more; how old is his sister?

11. What do you divide by to get 1 third of a number? 1 fourth of a number?

12. What is 1 third of 12? 1 fourth of 12? 1 half of 12? 1 sixth of 12?

13. William has 30 doves; Rollo has 1 third as many and 2 doves besides; how many doves has Rollo?

14. 5 plus 3, divided by 4, plus 1, multiplied by 3, less 5, divided by 2, equals what number?

15. 7 less 1, divided by 2, multiplied by 3, less 4, [illegible]ed by 8, less 1, equals how many?

Lesson LVI.

WILLIE and his sister Ida are to share an apple between them; and so Willie has cut it into two equal parts.

1. What is one of these parts called?

Ans. One half of an apple.

2. You see, also, a pear divided into two equal parts. What is one of these parts called?

Ans. One half of a pear.

3. Yesterday, Willie cut his pencil into two equal parts, and gave one of the parts away. What part of the pencil did he give away?

4. What part of the pencil did Willie keep?

5. When anything is divided into two equal parts, what is one of the parts called?

Ans. One half of that thing.

6. Ida has one half of an orange in her right hand, and one half of an orange in her left hand; what do these two parts of the orange equal?

Ans. Two halves of an orange, or a whole orange.

7. How many halves equal a whole thing?

Lesson LVII.

1. Robert and his two little brothers are to share this melon among them. Into how many equal parts has the melon been cut?

2. What is one of the parts called? *Ans.* *One third* of the melon.

3. What are two of the parts called? *Ans.* *Two thirds* of the melon.

4. If Robert gives one third of the melon to each of his two brothers, how many thirds will they both have?

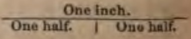
5. How many thirds of the melon will be left?

6. What do one third of a cake, and one third of a cake, and one third of a cake equal?

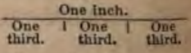
Ans. Three thirds of a cake, or a whole cake.

7. How many thirds equal any whole thing?

8. Draw on your slate a line *one inch* long; divide it into two equal parts. What is one of the parts called?



9. Draw another line *one inch* long; divide it into three equal parts. What is one of the parts called?



10. Which is longer, one third of an inch or one *half of an inch?*

Lesson LVIII.

SEE this orange. Below are some oranges divided into equal parts.

An orange divided into 2 equal parts.

One half of an orange. ☞

An orange divided into 3 equal parts.

One third of an orange. ☞

An orange divided into 4 equal parts.

One fourth of an orange. ☞

Which would be larger, one third of an orange or one half of it?

1. When anything is divided into four equal parts, what are the parts called?

Ans. Fourths: one of the parts is called *one fourth*; two of the parts are called *two fourths;* three of the parts are called *three fourths;* and the four parts are called *four fourths.*

2. How many fourths equal a whole thing?

3. Mrs. Allen cut a pie into 4 equal parts, and gave to each of her 3 children one of the parts; what part of the pie did each child have?

4. How many fourths did all have? How many fourths were left?

5. How many fourths are 1 fourth, and 1 fourth, and 1 fourth?

6. 3 fourths from 4 fourths leaves how many fourths?

7. How many fourths are 3 times 1 fourth?

8. 3 times 1 fourth, less 2 fourths?

Lesson LIX.

An orange divided into 5 equal parts.

One fifth of an orange. ☞

1. When anything is divided into five equal parts, what are the parts called?

Ans. Fifths: one of the parts is called *one fifth;* two of the parts, *two fifths;* and so on.

2. How many fifths of a day equal a whole day?

3. 2 fifths and 2 fifths are how many fifths?

An orange divided into 6 equal parts.

One sixth of an orange. ☞

4. When anything is divided into 6 equal parts, what are the parts called?

5. How many sixths of an hour equal a whole hour?

6. If you had one orange, and should give away 1 sixth of it, how many sixths would you have left?

7. 1 sixth from 6 sixths leaves how many sixths?

8. When a loaf of cake is cut into 7 equal parts, what are the parts called?

9. If 1 seventh of a loaf of cake is eaten, how many sevenths will be left?

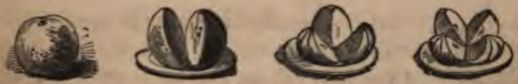
10. 7 sevenths less 1 seventh are how many sevenths?

11. 5 sevenths and how many sevenths are equal to a whole one?

12. When anything is divided into 8 equal parts, what are the parts called?

13. In one whole one how many ninths? how *many tenths?*

Lesson LX.



1. TELL me now what you mean by 1 half of a thing.

Ans. One of the two equal parts into which the thing is divided.

2. Point in the picture to 1 half of an orange.

3. What do you mean by 1 third of a thing?

Ans. One of the three equal parts into which the thing is divided.

4. What do you mean by 2 thirds of a thing?

5. Point in the picture to 1 third of an orange; to 2 thirds of an orange.

6. What do you mean by 1 fourth of a thing?

7. What do you mean by 2 fourths of a thing? by 3 fourths of a thing?

8. Point to 1 fourth in the picture.

9. What do you mean by 1 fifth of a thing? by 2 fifths of a thing? by 3 fifths of a thing?

10. What is meant by 1 sixth of a thing? by 2 sixths of a thing? by 5 sixths of a thing?

11. Into how many equal parts must anything be divided to make halves?

12. If the parts are not equal, are they halves?

13. Into how many equal parts must anything be divided to make thirds? to make fifths?

14. Into how many equal parts must anything be divided to make sevenths? eighths? tenths?

15. When anything is divided into a number of *equal parts*, the parts are called FRACTIONS.

Lesson LXI.

1. A PINEAPPLE was divided equally among 3 sisters and their 2 brothers; into how many parts was it divided?

2. What part of the pineapple did each child have?

3. How many fifths did all the sisters have? How many fifths did both of the brothers have?

4. 3 fifths from 5 fifths leaves how many fifths?

5. If you spend 1 eighth of a day in work, 2 eighths in school, 1 eighth in play, 1 eighth in reading and eating, and the rest in sleeping, how many eighths do you spend in sleeping?

6. 8 eighths less 5 eighths are how many eighths?

7. If 1 watermelon costs 1 fourth of a dollar, how many fourths of a dollar will 2 watermelons cost?

8. 2 times 1 fourth are how many fourths?

9. If it takes 1 fifth of a yard of cloth to make 1 cap, how many fifths will it take to make 3 caps?

10. If 1 kite costs 1 sixth of a dollar, what will 4 kites cost?

11. If 1 book costs 1 sixth of a dollar, how many books can you buy for 2 sixths of a dollar?

12. How many times is 1 sixth contained in 2 sixths?

13. If one pen-holder costs 2 eighths of a dollar, how many pen-holders can be bought for 6 eighths of a dollar?

14. 8 tenths of a pound of figs were divided e[illegible]ng 4 girls; how many tenths did each

Lesson LXII.

1. If a melon is worth 10 cents, what is 1 half of it worth?

2. If a pencil is worth 6 cents, what is 1 half of it worth?

3. What is 1 third of the pencil worth?

4. Which is worth more, 1 half or 1 third of the pencil? Why?

5. If 8 cents are paid for a cabbage, how many cents are paid for 1 half of it?

6. How many cents are paid for 1 fourth of it?

7. Which costs more, 1 half or 1 fourth of the cabbage? Why?

8. If a cluster of grapes is worth 24 cents, what is 1 half of it worth?

9. What is 1 third of the cluster worth?

10. What is 1 fourth of the cluster worth?

11. What is 1 sixth of the cluster worth?

12. There are 12 eggs in 1 dozen; how many eggs are there in 1 half of a dozen? in 1 third of a dozen?

13. How many eggs are there in 2 thirds of a dozen?

14. If there are 10 cents in 1 dime, how many cents are there in 1 fifth of a dime?

15. How many cents are there in 3 fifths of a dime?

16. Two fifths of 10 are how many? 4 fifths of 10?

17. At 2 cents a yard, what will 2 yards and 1 half of a yard of ribbon cost?

18. 2 times 2 and 1 half of 2 are how ma

19. 2 times 3 and 1 third of 3 are how

Lesson LXIII.

1. If 1 half of an orange is worth 3 cents, what will a whole orange be worth? Why?

Solution. If 1 half of an orange is worth 3 cents, 2 halves, or a whole orange, will be worth 2 times 3 cents; 2 times 3 cents are 6 cents. Therefore a whole orange will be worth 6 cents.

2. If 1 third of a pound of raisins is worth 4 cents, what are 2 thirds of a pound worth?

3. What is 1 pound of raisins worth?

4. If 1 fourth of a loaf of bread is worth 2 cents, what are 2 fourths of a loaf worth?

5. What are 3 fourths of a loaf worth?

6. What is a whole loaf worth?

7. 2 is 1 fourth of what number?

8. I bought 1 fifth of a pound of figs for 3 cents; what would 1 pound cost at the same rate?

9. 3 is 1 fifth of what number?

10. Mr. Rice paid 8 dollars for the rent of his house for 1 sixth of a year; what rent should he pay for the whole year?

11. 8 is 1 sixth of what number?

12. Mr. Smith paid 1 dollar for 1 eighth of a load of wood; what should he pay for 1 load of wood?

13. Hattie is 2 years old, which is 1 tenth as old as her sister Mary; how old is Mary?

14. By paying a man 5 dollars, I shall pay him 1 seventh of the money I owe him; how much do I owe him?

15. How many dollars shall I owe the man after paying the 5 dollars?

Lesson LXIV.

1. WHEN anything is divided into equal parts, what are the parts called?

Ans. The parts are called fractions.

2. Mary gave 2 fifths of a dollar for a book, 1 fifth for a pencil, and 1 fifth for a paper slate; how many fifths did she give for all?

3. A man bought 1 sixth of a cheese for 1 dollar, and afterwards sent his son to buy the remainder; how many sixths did his son buy?

4. How many dollars should the son pay for the part of the cheese which he bought?

5. What will 2 fishes cost at 2 fifths of a dollar each?

6. If a boy receives 4 sixths of a dollar for 1 day's work, how many sixths will he receive for 1 half of a day's work? for 1 fourth of a day's work?

7. If 2 sevenths of a pound of raisins cost 4 cents, what will 1 seventh cost? what will 1 pound cost?

8. Mary gave a beggar 5 cents, which was 1 fourth of all the money she had; how many cents had she?

9. 2 is 1 eighth of what number?

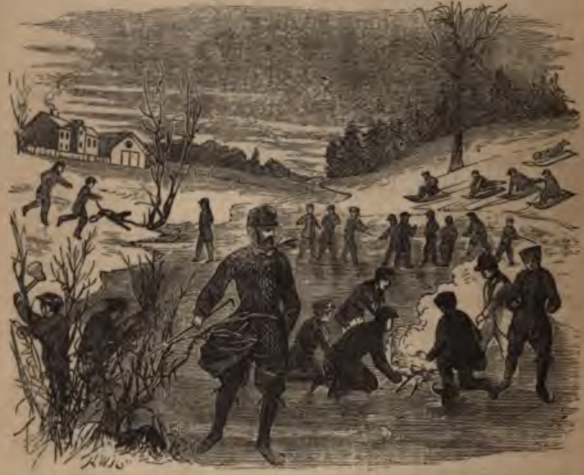
10. How many are 5 sevenths less 4 sevenths?

11. 3 times 2 ninths are how many ninths?

12. How many times are 2 ninths contained in 8 ninths?

13. What is 1 third of 6 tenths?

Lesson LXV.



MR. FREEMAN has given some of his scholars a holiday upon the ice as a "reward of merit" to the boys for their excellence in spelling.

1. How many boys can you count in the picture?

2. Those two boys running down the hill with the dog do not belong to the school: the rest of the boys in the picture, and 6 boys who were left at home to study, belong to the school; how many boys belong to the school?

3. How many are 25 — 2 + 6?

4. The school-house is 10 miles farther up the river, and all this distance the boys have skated at *the rate of* 5 miles an hour; how many hours has *it required?*

5. 10 are how many times 5? times 2?

Lesson LXVII.

Dry Measure.

About measuring dry things, as Fruit, Vegetables, Grain, etc.

Repeat the table:
2 pints = 1 quart.
8 quarts = 1 peck.
4 pecks = 1 bushel.

1. How many pints in 1 quart? in 2 quarts?

2. How many pecks in 1 bushel? in 2 bushels?

3. In the picture you see a bushel of potatoes and a peck measure; how many times can a peck measure be filled from a bushel of potatoes?

4. If I pay 1 dollar for 1 peck of peaches, what must I pay for 1 bushel of peaches? for 2 bushels?

5. How many pecks are there in 3 bushels? in 3 bushels and 1 peck?

6. How many quarts are there in 1 peck? in 2 pecks? in 3 pecks? in 3 pecks and 2 quarts? in 1 bushel?

7. If 1 quart of berries costs 7 cents, what will 1 peck cost at the same rate?

8. If the price of 1 peck of berries is 40 cents, what is the price of 1 quart?

9. In 16 pints how many quarts? how many pecks?

10. In 20 pints how many quarts? how many pecks, and how many quarts will remain?

11. In 12 pecks how many bushels?

12. In 15 pecks how many bushels, and how *many pecks* will remain?

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Lesson LXVIII.

Liquid Measure.

About measuring liquids, as Milk, Molasses, Oil, etc.

Repeat the table:

4 gills = 1 pint.
2 pints = 1 quart.
4 quarts = 1 gallon.

1. Have you ever seen a cup that holds a gill?

2. How many gills are there in 1 pint? in 3 pints?

3. How many pints are there in 2 quarts? in 2 quarts and 1 pint? in 3 quarts and 1 pint?

4. How many gills are there in 1 quart?

5. How many quarts are there in 1 gallon?

6. How many gills are there in 1 gallon?

7. If milk costs 8 cents a quart, what must I pay for a pint of milk? What must I pay for a gill?

8. When molasses costs 24 cents a quart, what must I pay for a pint?

9. How many pint bottles must be used to hold 2 quarts of catsup?

10. How many times must I fill a pint cup to measure out 1 gallon of oysters?

11. There are some tumblers which hold half a pint each; how many of these tumblers must be used to hold 1 quart of currant jelly?

12. A milkman had 2 gallons of milk in a can, and sold 1 quart to one person, 2 quarts to another, and 2 quarts to another; how many quarts were left in the can?

Lesson LXIX.

AVOIRDUPOIS WEIGHT.

ABOUT weighing common things, as Flour, Meat, Butter, etc.

1. Do you know how heavy a pound is? How many pounds do you think you can lift?

Repeat the table:

16 ounces = 1 pound.
100 pounds = 1 hundred weight.
20 hundred weight = 1 ton.

2. How many ounces are there in 1 pound? How many ounces are there in 1 half of a pound?
3. How many ounces are there in 1 fourth of a pound? in 3 fourths of a pound?
4. John bought 1 half of a pound of candy, and ate 2 ounces of it; how many ounces had he left?
5. Henry bought 1 fourth of a pound of cinnamon for his mother; how many ounces did he buy?
6. How many ounces in 1 eighth of a pound? in 3 eighths of a pound?
7. How many pounds in 1 hundred weight?
8. Mrs. Jones bought 1 half of a hundred weight of flour at 4 dollars a hundred weight; how many dollars did she pay?
9. Mrs. Day bought 1 half of a ton of coal; how many hundred weight did she buy?
10. How many hundred weight in 1 fourth of a ton? in 3 fourths of a ton?

Lesson LXX.

LONG MEASURE.

ABOUT measuring Distances.

Repeat the table:

One inch.

12 inches = 1 foot.
3 feet = 1 yard.
5 and 1 half yards = 1 rod.
40 rods = 1 furlong.
8 furlongs = 1 mile.

Each little girl and boy may mark off 12 inches on a piece of tape, or paper, or string. You have now something to measure with.

1. How many inches long is your measure? how many feet long is it?

2. How many inches long is your pencil?

3. How many inches long is your slate? How many inches wide is it?

4. How many inches long do you think your Primary Arithmetic is? your Spelling Book? Measure them, and see.

5. How many inches is it around your neck? around your wrist?

6. Measure 3 feet on the floor. What name do you give to the measure which is 3 feet long?

7. How many inches are there in 1 foot? in 2 feet? in 1 yard?

8. If Sarah is 2 feet 3 inches high, how many inches high is she?

9. In 28 feet how many yards, and how many *feet will remain?*

Lesson LXXI.

UT measuring Time.

Repeat the table:

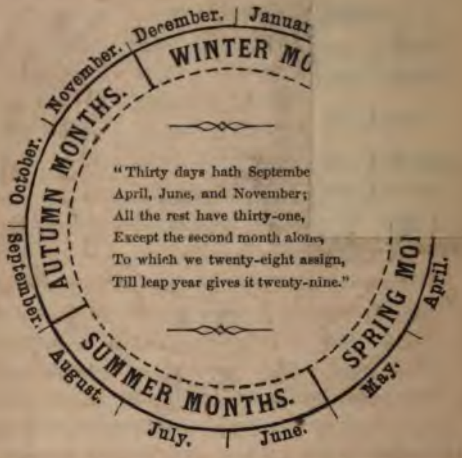
60 seconds = 1 minute.
60 minutes = 1 hour.
24 hours = 1 day.
7 days = 1 week.
365 days = 1 common year.
366 days = 1 leap year.

y keep perfectly still for one minute. Raise your hand when you think a minute has passed. Now, — begin.

1. How many minutes are given you for recess?
2. Which seemed longer, the minute you just measured, or one of the minutes of your recess?
3. What time is it by the watch in the picture?
4. How many days are there in 1 week?
5. Repeat their names, beginning with Sunday.
6. How many days are there in 2 weeks? in 2 weeks and 1 day?
7. In 16 days how many weeks are there, and how many days will remain?
8. In 25 days how many weeks, and how many days will remain?
9. If Emma can knit round her stocking in 10 minutes, how many times can she knit round in 30 minutes? in 1 hour? in 1 hour and 1 half?
10. Joseph works 2 hours every day except Sunday; how many hours does he work in 1 week? in 1 week and 1 half? in 1 week and 5 days? in 2 weeks?

11. There are 12 months in their names, beginning with Jan

12. Name the Winter months Summer months; Autumn mont



"Thirty days hath Septembe
April, June, and November;
All the rest have thirty-one,
Except the second month alone,
To which we twenty-eight assign,
Till leap year gives it twenty-nine."

13. Name the months having only 30 days each.

14. Name the months having 31 days each.

15. What month has only 28 days in it?

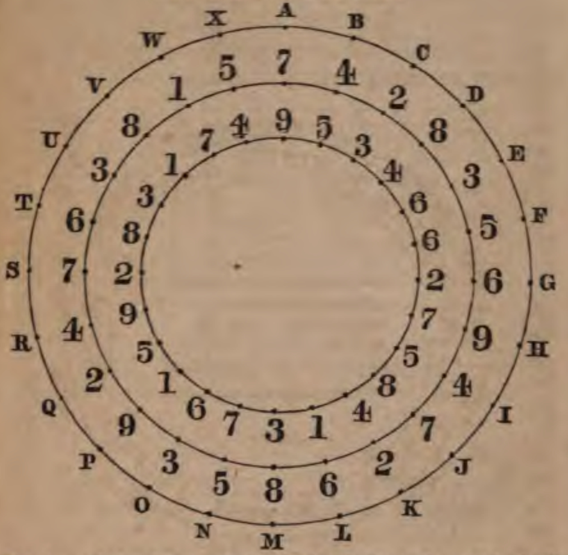
16. Leap year comes once in 4 years. How many days has February then?

17. How many days are there in a leap year?

18. How many months are there in 1 year? in 1 half of a year? in 1 fourth of a year?

19. How many months is it from the first day of January to the first day of April? from the first day of April to the first day of July? from the *first d* [illegible] nuary to the first day of July?

Review Circle.



The above circle of figures is designed to facilitate the practice in the fundamental operations of Arithmetic, especially in Addition and Subtraction. The following illustrations will show its use.

ADDITION.

Illustration I. Let the pupil or pupils commence at any given number of either circle, and add towards the right or left, two, three or more numbers, as directed by the teacher. For example: commencing at A, in the outer circle, and adding three numbers towards the right, the pupil says, 7, 11, 13; commencing at B, he says, 4, 6, 14; commencing at C, he says, 2, 10, 13; etc.

Illustration II. Commencing as before, the pupil continues adding till the teacher gives the signal for him to stop.

SUBTRACTION.

Illustration III. Mention some number, and let the pupil subtract from it the numbers in either circle successively, as far as the subtraction can be extended. For example: commencing at A, in the outer circle, and subtracting the numbers towards the right from 25, the pupil says *25, 18, 14, 12, 4, 1.*

MULTIPLICATION TABLE.

	0 is	**1** is	**2** is	**3** is	**4** is	**5** is	**6** is	**7** is	**8** is	**9** is	**10** is	**11** is	**12** is
Once	0	1	2	3	4	5	6	7	8	9	10	11	12
2 times	0	2	4	6	8	10	12	14	16	18	20	22	24
3 times	0	3	6	9	12	15	18	21	24	27	30	33	36
4 times	0	4	8	12	16	20	24	28	32	36	40	44	48
5 times	0	5	10	15	20	25	30	35	40	45	50	55	60
6 times	0	6	12	18	24	30	36	42	48	54	60	66	72
7 times	0	7	14	21	28	35	42	49	56	63	70	77	84
8 times	0	8	16	24	32	40	48	56	64	72	80	88	96
9 times	0	9	18	27	36	45	54	63	72	81	90	99	108
10 times	0	10	20	30	40	50	60	70	80	90	100	110	120
11 times	0	11	22	33	44	55	66	77	88	99	110	121	132
12 times	0	12	24	36	48	60	72	84	96	108	120	132	144

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